



FRIDAY, OCTOBER 1.

Ditching Plow and Scraper.

The engravings herewith represent the method and appliances which have been devised and used by Mr. A. E. Buchanan, Division Superintendent of the Arkansas Division of the St. Louis, Iron Mountain & Southern Railway, for making ditches along a portion of the road referred to, of which Mr. Buchanan says: "About 150 miles of it have no natural drainage. The track was laid on an embankment averaging only about 18 in. in height. There is a slight fall going south in the direction of Little Rock, of about one foot to the mile. A series of waves in the surface of the country, at right angles to the direction of the road, serves to neutralize the effect of the inclination, except at intervals of from two to five miles sloughs occur leading off from the road. Into these sloughs the ditches have been led, and are made with a grade of one foot to the mile."

The method of making the ditches is first to run an enormous plow, fig. 2, along the track, which is followed by a scraper, shown in fig. 1. These are attached to a platform car, as shown in fig. 1, a locomotive furnishing the motive power. In making the ditches the plow is first run to the depth of about one foot, and they are then finished with the scraper to any depth desired up to four feet. The ditch shown in fig. 1 is 3 ft. deep and 12½ ft. wide on top.

When the supply of water is abundant the scraper will cut from 3 to 5 in. each time running through, leaving a clean, smooth surface behind.

The plow is used for making the first opening, and is of the following dimensions: A, the beam, is made of white-oak 7×13 in., and 13 ft. long. The standing cutter weighs 160 lbs. The land-side is a bar 2×8 in.×6 ft. The mold-board is 3 ft. high. The total weight of the plow is 2,000 lbs., and it cuts a furrow 2½ ft. wide.

The plow is attached to the car in very much the same way as the scraper is represented in fig. 1. The scraper consists of a steel plate 17 ft. 9 in. long × 3 ft. wide and ¾ in. thick, riveted to a steel rail of ordinary section. The land-side and braces, shown in the engraving, are also made of ordinary steel rails. The steel plate forms an angle of 45 degrees with the land-side. The whole scraper weighs about 2,800 lbs.

The blocks and tackles on the car are used for guiding the scraper, which is done by lowering or elevating the rear end, as the case may require.

The car used with this machinery weighs 43,900 lbs., and was built by the Master Mechanic of the road, Mr. Finlay; 20,000 lbs. of its weight consists of iron rails placed under the floor.

About 100 miles of ditches have been made with this machinery. On several occasions, Mr. Buchanan writes, "I have made two miles of ditches, two feet in depth, per day of ten hours."

More Peculiar Locomotives.

Since the article with a similar title to the above was written last week, we have received from a correspondent the following description of the Stevens locomotive, which is now in process of construction in Concord, N. H.

"The furnace is of the usual shape, but is made of cast-iron and lined with fire-brick. The combustion chamber runs forward from the furnace to the yoke-plate. This chamber is made of wrought-iron plates, except the front, and the bottom and side walls are also lined with fire-brick. The front end of this combustion chamber is cast iron and extends up and supports the front end of the boiler.

"The boiler is a square box extending from the back end of the furnace to the front end of the combustion chamber. It is about six feet wide and two feet deep and is stayed with stay-bolts running through and through each way.

"There are 530 tubes varying from two to three feet long and three inches in diameter screwed into the bottom of the boiler. These tubes are welded up solid at the bottom end and hang from the boiler down into the furnace and combustion chamber. They are also provided with an internal tube one inch in diameter to promote circulation. The products of combustion are taken through a round hole in the front of the combustion chamber and conducted off in a straight smoke-pipe. Mr. Stevens expects to get steam enough without the use of the exhaust steam to stimulate combustion, relying simply on a steam jet in the smoke-pipe.

"The cylinders are fastened to a saddle after the Mason plan. The saddle is cast hollow and forms a reservoir from which the steam is distributed through the valves to the cylinders. There are four valves to each cylinder, two for ad-

mission and two for exhaust. These valve seats and valves are hard to describe, but the reader must imagine a valve-seat shaped like a silk hat, and enclosed in a circular chest, the rim of the hat representing a flange which is bolted steam-tight to the flat surface or tops of the cylinder, and the steam passages lead from the cylinder into the 'hat.' Steam-ports are cut vertically in this 'hat' all around, the ports being ¼ in. wide and the bars between the ports about 1 in. The valve is another 'silk hat,' bored accurately to fit down over the seat and having ports cut through its walls to correspond with the ports in the first 'hat' or seat. These valves are given a reciprocating rotary motion by an ingenious cam motion. The valves must move only ¼ in. to open the ports wide. A spindle is attached to the top of the valve and runs through a stuffing box on top of the steam chest. A short arm is keyed to the top end of the spindle and this arm is operated upon by the cams.

"The engine will be completed in about a month."

The *Scientific News* says that a pneumatic engine constructed in accordance with the Hardie & James system is now being constructed at the Baldwin Locomotive Works in Philadelphia.

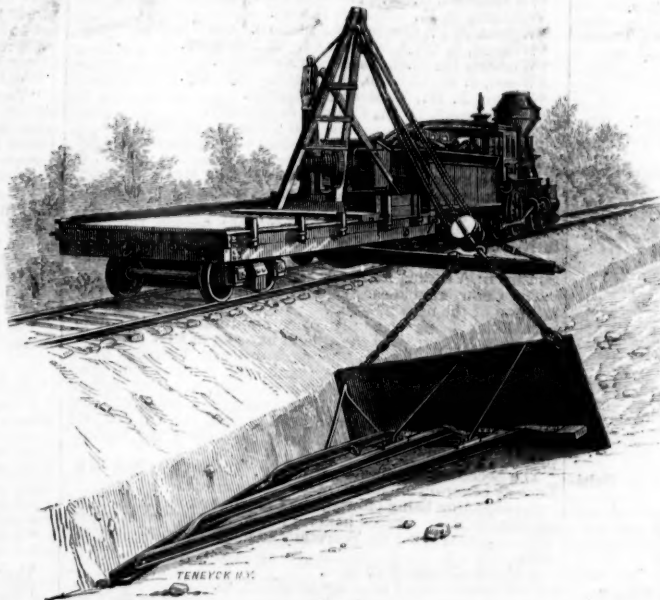


Fig. 1.

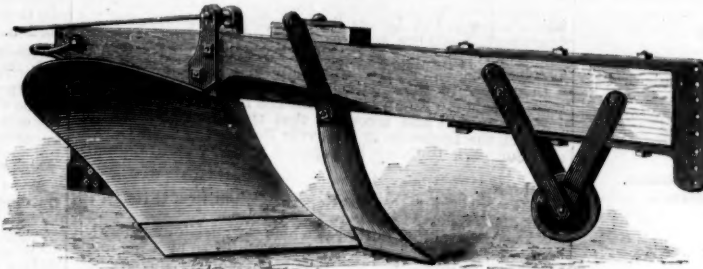


Fig. 2.

RAILROAD DITCHING PLOW.

Contributions.**Vacuum and Automatic Brakes.**

LONDON, 26 Austin Friars, Sept. 14, 1880.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I beg to forward you by post two pamphlets wherein I not only beg to give my personal reasons for not adopting automatic brakes in England, but furnish the results of work performed, which will show that not only may automatic action to brakes be undesirable but unnecessary; moreover, I do not consider that because from the way your lines are worked it may be considered suitable for American traffic, that it follows that it must be suitable for ours. We use appliances other than brakes, and you will see from a paper I enclose, that through the extension of block signals, locking of points, the use of simple continuous brakes, and other improvements, the compensation paid for passengers and goods has steadily decreased in the last four years named, whilst the mileage has increased.

If you have not seen the general report of our Board of Trade upon accidents for the year 1879, I would refer you to page 15 therein. You will nowhere find any reason for complicating brakes in England, and we ran over 115 millions of passenger train-miles in that year, and only killed one passenger from causes beyond their own control. The fall of the Tay Bridge is not included.

In another paper, sent herewith, you will see that three non-automatic brakes on ten companies ran together 1,495,727 miles without one fault being recorded; whereas, taking the North British and the London & Brighton railways, two companies which have adopted an automatic brake, you will find 1,408,225 miles run and 189 faults recorded, one delay absorbing 23 minutes, and you can only find about 41,000 miles run on three railways with automatic brakes.

At page 456, in your impression of Aug. 27, you draw

attention to the fact that in America you are deprived of the advantages of competition which we enjoy in England, because the Smith's vacuum patents were bought up in America by the Westinghouse Company, and I am led to infer that you imply that the use of the Westinghouse brake is more extended than it otherwise might be on account of the railway companies having to fit their stock for the through traffic.

We have in England nine automatic brakes named as complying with the conditions laid down by the Board of Trade, among them the vacuum brake, and I consider that the Hardy cylinder is far superior to the patents which you say have been bought up by the Westinghouse Company.

I rejoice to say that this vacuum brake and some others of the nine automatic brakes cannot detain the trains against the will of the drivers and guards, whereas one has (more than once) done so for 20 minutes and even more. While on the question of competition I may inform you that I have been Chairman and am now a director of the Vacuum Brake Company, and that we long ago sent to New York Mr. Macdonald, one of the company's employes, also the brake gear of our Hardy patents. I believe you can hear of this brake, as our

agent informed us it was fitted on a train of the Erie Railway Company, but as our agent suddenly disappeared from New York you will easily understand that for the time being we have been checkmated in our attempt to furnish America with that very competition you deplore does not exist, and which the Vacuum Brake Company is only too ready to furnish you with, but for the unexplained mystery to which I have referred.

Perhaps publicity in your valuable journal may throw some light upon the subject.

The question to be answered is, why did he leave the company's service whom he had served some time, and conceal his whereabouts without giving the company the slightest information or reason for deserting its interests; he having been specially sent to New York to introduce the Vacuum Brake Company's latest patented improvements, as I have already informed you.

The tell-tale used with the Vacuum Brake, whether in its automatic or non-automatic form, is simple and reliable, and should you wish to know more about it and this company's brakes the fullest information would be furnished on application to the manager of the Vacuum Brake Company, 32 Queen Victoria Street, London.

Your Obedient Servant,

FREDERICK J. HAGGARD.

Some Hinderances to the Growth of Passenger Traffic.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I have been interested in the several articles upon the "Growth of Passenger Traffic" that have appeared in the columns of your very valuable paper from time to time, and while I shall not attempt to criticize or review them, it has occurred to me that the questions involved might be further profitably discussed. Comparisons have been drawn between the relative increase of the freight and passenger traffic, and surprise has been expressed that the former has shown such wonderful increase, while the latter has remained comparatively stationary. To me this seems easy

of explanation, and while I have no statistics to present, I would supply suggestive facts:

First. A large percentage of the increase in freight traffic comes from the productions of the new states in the West, settled by people who travel but little but who do and can (almost every man, woman and child) till the soil and help to bring forward that which swells the freight traffic. The emigrants from foreign shores who make up the population of our new states never traveled much before coming to us, and consequently are not educated to do so, and after they once reach their new homes they are seldom seen upon our passenger trains—certainly not until after a long residence here. They are, however, producers of grain, stock and other articles that swell the freight traffic from the start.

Second. The revenues from the freight traffic suffer no such depletion as those of the passenger traffic. On the other hand, these depletions of the passenger traffic serve to increase that of the freight. I refer to the free passes and special tickets issued, commissions paid, freight carried free as baggage, etc., etc. I fancy that if the passenger department should obtain credit for what it does to build up other branches of the service, it would make a far better showing.

Third. It has been said that increased freight traffic brings increased passenger traffic. Such is not my experience, but the reverse. The main products of the country are now controlled largely by few people; this concentration of power is increasing every year, and, of course, the fewer the number that go to make up the holders of property, the less number of travelers.

Fourth. The increased facilities offered by the Post Office Department, telegraph and express companies all tend to decrease the revenues of the passenger traffic, while they increase those of the freight.

I have thus given some of the reasons (and there are many others) why passenger earnings cannot be expected to show

the same increase as those of freight, in hopes that the department to which I have given a life service may not be debarred of the credit to which it is entitled. W. C. H.

Convention of the National Association of General Passenger and Ticket Agents.

We give below the official report of the convention held in New York, beginning Sept. 21:

Convention called to order at 11 a. m., President W. B. Shattuc in the chair.

The roll was called, and a quorum found to be present. The Executive Committee, through its Chairman, Mr. Tuttle, reported favorably on the credentials presented.

The following is the present list of members. Those marked with a * were in attendance; those marked with a † have become members since last Convention.

*Abbott, John N., New York, Lake Erie & Western.
*Ady, George, Denver, South Park & Pacific.
*Allen, D. C., South Carolina.
*Angell, Joseph, Delaware & Hudson Canal Co.
*Anthony, W. M., Boston, Barre & Gardner.
*Appleby, C. T., Illinois Midland.
*Archer, John J., Scioto Valley.
*Atmore, C. P., Louisville & Nashville.
*Baldwin, H. P., Central of New Jersey.
*Baldwin, Wm. S., Pittsburgh, Titusville & Buffalo.
*Barker, James, Wisconsin Central.
*Bennett, E. J., Little Rock & Fort Smith.
*Blood, H. B., Keokuk & St. Louis Line Steamers.
*Bodine, John F., Williamstown, N. J.
*Boothby, F. E., Maine Central.
*Boylston, S. C., Charleston & Savannah.
*Bronson, H. M., Cincinnati, Sandusky & Cleveland.
*Brown, John W., Indiana, Bloomington & Western.
*Brown, J. D., Missouri, Kansas & Texas.
*Brown, J. W., Seaboard & Roanoke and Bay Line Steamers.

*Buell, F. S., Buffalo, New York & Philadelphia.
*Butterfield, Theo., Utica & Black River.
*Byington, E. B., Lehigh Valley.
*Carey, S. E., Chicago, St. Louis & New Orleans.
*Carpenter, A. V. H., Chicago, Milwaukee & St. Paul.
*Carpenter, T. P., Lake Superior Transit Co.
*Carpenter, W. A., Detroit, Lansing & Northern.
*Cary, J. W., Lake Shore & Michigan Southern.
*Case, Munson T., Green Bay & Minnesota.
*Chandler, F., Missouri Pacific.
*Charlton, James, Chicago & Alton.
*Chipley, W. D., Pensacola.
*Clarke, F. B., Chicago, St. Paul & Minneapolis.
*Cole, L. M., Baltimore & Ohio.
*Cone, C. S., Jr., Ohio & Mississippi.
*Connor, Geo. L., Old Colony Steamboat Co.
*Cummings, S. W., Fitchburg.
*Dadmun, Geo. A., Philadelphia, Wilmington & Baltimore.

*Daniels, Geo. H., Wabash, St. Louis & Pacific.
*Danley, W. L., Nashville, Chattanooga & St. Louis.
*Davant, J. S., Port Royal & Augusta.
*Davant, T. S., Memphis & Charleston.
*Davidson, W. M., Florida Central.
*Dawes, A. C., Kansas City, St. Joseph & Council Bluffs.
*Derling, H. R., Jeffersonville, Madison & Indianapolis.
*Dixon, W. H., St. Paul & Sioux City.
*Dorsey, E. R., Georgia Railroad.
*Dunham, A. S., Chicago & Eastern Illinois.
*Dunfee, W. M., Providence & Worcester.
*Edgar, Wm., Great Western.
*Egan, John, Cincinnati, Indianapolis, St. Louis & Chicago.

*Ernst, J. C., Kentucky Central.
*Ettinger, M. L., Chicago & Iowa.
*Farmer, L. F., Pennsylvania.
*Filkins, L. W., Stonington Steamship Line.
*Firth, W. H., Detroit, Grand Haven & Milwaukee.
*Fisher, T. F., Galveston, Houston & Henderson.
*Flinders, D. J., Boston & Maine.
*Ford, E. A., Vandalia Line.
*Foye, Chas. H., Portland & Ogdensburg.
*Gabbett, Cecil, Western of Alabama.
*Gallup, E., Boston & Albany.
*Gault, Thomas D., Chicago, Pekin & Southwestern.
*Hair, R. S., St. Paul & Duluth.
*Hall, J. Morton, Allegheny Valley.
*Hancock, C. G., Philadelphia & Reading.
*Hanson, A. H., Illinois Central.
*Harrison, W. H., Columbus & Toledo and Columbus & Hocking Valley.

*Heakes, F., Evansville & Terre Haute.
*Hewitt, John C., People's Line Steamers.
*Hills, F. C., Sioux City & Pacific.
*Holwill, W. F., Delaware, Lackawanna & Western.
*Houston, W. J., Atlanta & Charlotte Air Line.
*Howard, Conway R., Chesapeake & Ohio.
*Jay, M. S., Memphis & Little Rock.
*Johnson, A. H., Arkansas Midland.
*Johnson, W. P., Lake Shore & Michigan Southern.
*Kendall, A. C., New York & New England.
*Kendrick, D. M., Indianapolis & St. Louis.
*Kimball, Thomas L., Union Pacific.
*Knight, Ray, Selma, Rome & Dalton.
*Labelle, J. B., Quebec, Montreal, Ottawa & Occidental.
*Leet, A. B., Grand Rapids & Indiana.
*Lord, C. K., Baltimore & Ohio.
*Lowell, Perceval, Burlington & Missouri River in Nebraska.

*Lyon, James A., Keokuk Northern Line Packet Co.
*McDonnell, A. O., Atlantic, Gulf, & West India Transit Co.

*Macabe, C., Peoria, Pekin and Jacksonville.
*Masters, W. H., Texas & New Orleans.
*Miller, F. A., Cairo & Vincennes.
*Mills, B. F., Burlington, Cedar Rapids & Northern.
*Moran, M. R., New London Northern.
*Morrison, L. B., Alabama Great Southern.
*Morse, F. E., Hannibal & St. Joseph.
*Morse, F. W., Montpelier & Wells River.
*Mullen, Geo. W., Fort Wayne, Muncie & Cincinnati.
*Myers, F. R., Pennsylvania Company.
*Nourse, J. P., Flint & Pere Marquette.
*O'Brien, W. L., Pittsburgh, Cincinnati & St. Louis.
*Ogden, James R., East Tennessee, Virginia & Georgia.
*Orme, A. J., Atlanta & West Point.
*Parker, S. S., Louisville, Cincinnati & Lexington.
*Peirce, T. W., Jr., Galveston, Harrisburg & San Antonio.
*Pomeroy, F. L., Boston, Hoosac Tunnel & Western.
*Pope, A., Wilmington & Weldon.
*Ray, E. A., New Haven & Northampton.
*Rice, Owen, Cincinnati, Wabash & Michigan.
*Richardson, John B., Morgan's Louisiana & Texas R.R. & S. S. Co.
*Richardson, Loring, Ogdensburg & Lake Champlain.
*Rockwell, Chas. H., Indianapolis, Peru & Chicago.
*Ruggles, O. W., St. Louis, Iron Mountain & Southern.
*St. John, E., Chicago, Rock Island & Pacific.
*Sanborn, G. G., Northern Pacific.

Sanderson, Geo. A., Indianapolis, Decatur & Springfield.
Schrivier, J. G., Morgan's Louisiana & Texas.
*Serrat, M. W., Utica, Ithaca & Elmira.
*Shattuc, W. B., New York, Pennsylvania & Ohio.
*Stinson, J. D., Shenango & Allegheny.
*Slaughter, M., Virginia Midland.
*Smith, A. D., Pittsburgh & Lake Erie.
*Smith, A. J., Cleveland, Columbus, Cincinnati & Indianapolis (Bee Line).

*Smith, Geo. W., Lake Erie & Western.
*Smith, Wm. F., Central Vermont.
*Snow, F. E., Canada Southern.
*Stennett, W. H., Chicago & Northwestern.
*Stevenson, Samuel, Cincinnati, Hamilton & Dayton.
*Taylor, C. A., Richmond, Fredericksburg & Potomac.
*Taylor, Jas. L., Savannah, Florida & Western.
*Thrall, W. A., Chicago & Northwestern.
*Tilton, J. A., Cleveland, Mt. Vernon & Columbus.
*Townsend, H. C., Wabash, St. Louis & Pacific.
*Tuttle, L., Eastern Railroad (Mass.).
*Van Benthuysen, C. R., New York & Albany Day Line Steamers.

*Waldo, J., Houston & Texas Central.
*Waller, Chas. J., Mobile & Ohio.
*Wells, Lyman, Northeastern of Georgia.
*Wentworth, Henry C., Michigan Central.
*White, W. F., Atchison, Topeka & Santa Fe.
*Whitehead, G. A., Central of Georgia.
*Williams, D. E., Mobile & Girard.
*Wilson, E. F., Cincinnati Southern.
*Wilson, S. C., New York City & Northern.
*Wishart, D., St. Louis & San Francisco.
*Wood, J. R., Chicago, Burlington & Quincy.
*Wrenn, B. W., Western & Atlantic.
*Zimmerman, D. M., Camden & Atlantic.

Total number of members, 146; Number present, 118.
Special credentials for this meeting were presented as follows: By Mr. George B. Moore, representing Mr. F. S. Buell, and by Mr. C. W. Fuller, representing Mr. J. W. Cary. The Executive Committee approved the minutes of the last meeting as published.

The Committee on Rates then went into session, representatives of the following roads being added to those appointed last year: Chicago, Milwaukee & St. Paul; Cincinnati Southern; Virginia Midland.

The Chair announced the next order of business to be the location of the next meeting.

St. Louis being the only place nominated it was unanimously decided to hold the annual meeting at that point.

The Chair announced the next order of business to be "unfinished business." The Committee composed of land grant roads, appointed at the last meeting, to report upon a communication from the Quartermaster-General of the United States, not being ready, on motion the time of said committee was extended to the next meeting of the Association.

The Secretary nominated Mr. C. P. Leland and Mr. E. C. Luce as honorary members of the Association.

No objection being offered, the Chairman announced those gentlemen duly elected honorary members of the Association, and instructed the Secretary to make the necessary record.

Adjourned until 3:30 p. m.

Convention called to order at 3:30 p. m.

The Chairman of Committee on Rates reported to the Convention that his Committee was unable to proceed further with the making of passenger rates until the differences existing between the Louisville & Nashville Railroad and the Cincinnati Southern Railway were settled, both claiming their respective roads as the short line from New Orleans to Cincinnati.

In answer to the Chair, Mr. Atmore stated that tickets were on sale via Milan, and trains ran in connection.

It was moved and seconded that the differences existing between the Louisville & Nashville Railroad and the Cincinnati Southern Railway be referred to the General Committee.

Adopted.
After a short recess the General Committee, through its Chairman, reported as follows:

"The General Committee, to whom the question as to which company, the Louisville & Nashville Railroad or Cincinnati Southern Railway, has the right to make the rate between Cincinnati and New Orleans, would respectfully report that from present information, which is taken for granted to be correct, the Louisville & Nashville Railroad is entitled to the privilege."

On motion, properly seconded, the report of the Committee was adopted, and the Chairman of the Committee on Rates so notified by the President.

At the request of the President, the Secretary read that portion of Section 8 in the by-laws in reference to the right to make through rates, which had been expunged at the last meeting of the Association, as follows:

"The right to make through rates between common points shall be accorded to the company or companies having the shortest line between said points over which through tickets are regularly sold, and trains run in connection;

"Provided, That when a water route forms part of such line and is in competition with a rail line, then the rates of the rail line shall be adopted in making through rates;

"Provided further, That such through rates shall not exceed the sum of the locals of any rail line between such points."

It was moved and seconded that Section 8, as above, be inserted in the by-laws of the Association.

Adopted.
The General Committee (consisting of Messrs. S. S. Parker, F. E. Snow, F. Chandler and E. Gallup) then reported as follows:

"The General Committee have had referred to it a circular signed by the general passenger agents and land commissioners of the Atchison, Topeka & Santa Fe Railroad; Union Pacific Railway (Union and Kansas divisions); St. Joseph & Western; Burlington & Missouri River in Nebraska, and Central Branch Union Pacific, asking that the Association favor an excursion, at half colonist rates now in force for excursion tickets, to the land points on the above lines, on Nov. 9, 1880, which request the Committee refer back to the Association with the recommendation that favorable action be taken."

A communication from J. A. Kingsbury in regard to the coupon baggage check, bearing his name, which was referred to the Committee, is also returned to the Association. The Committee consider the combined ticket and check as possessing great merits, and recommend discussion of it; but with a knowledge of past action on the subject of baggage checks and collections, which has failed to effect the reforms aimed at, hesitate to recommend legislation which may be a dead letter. It seems to us that any one desiring to do so can adopt the check and ticket independently of others, and that we need only suggest careful study of them by all members of the Association."

The following is the circular referred to in the report of the General Committee, dated Sept. 8, and signed by the officers above referred to:

"To the General Passenger & Ticket Agents' Association:
The undersigned, representatives of the land-grant rail-

roads west of the Missouri River, in Kansas and Nebraska, for the purpose of correcting erroneous opinions that have arisen regarding the condition of crops in the states herein named, and to increase travel to points along our several lines within the same, desire to secure arrangements with our connecting lines throughout the East for a special excursion, at special rate, on day to be named, such excursion to be conducted on the following basis:

"First. Tickets to be the same form of round-trip tickets now in use for land-grant points.

"Second. Tickets to run to one point only on each line interested, and to be as follows: DODGE CITY, on the Atchison, Topeka & Santa Fe; ELLIS, on the Kansas Division Union Pacific; GRAND ISLAND, on the St. Joseph & Western; LINCOLN, on the Burlington & Missouri; in Nebraska; KIRWIN, on the Central Branch Division, Missouri Pacific; and COLUMBUS, on the Union Pacific.

"Third. Tickets to be on sale at all points, at the special rates named, for one day only, to be fixed and determined by the Association. Tuesday, Nov. 9, 1880, is recommended.

"Fourth. We respectfully request and suggest that the rates to be charged by eastern connections shall be established at one-half the rate now made and quoted in colonist rate sheet of Aug. 1, 1880, to the land-grant points named herein.

"We desire the united action of the Association hereon, to avoid any claim of violation of rules and rates, and believe that the carrying out of the plan contemplated will result in permanent benefits, not only to the roads represented, but to their eastern connections."

On motion it was decided to take up the report of the Committee in sections.

The first section was amended as follows:

"The General Committee have had referred to it a circular signed by the general passenger agents and land commissioners of the Atchison, Topeka & Santa Fe Railroad; Union Pacific Railway (Union and Kansas Division); St. Joseph & Western; Burlington and Missouri River in Nebraska, and Central Branch Union Pacific, asking that the Association favor an excursion, at half colonist rates now in force for excursion tickets, to all of the land-grant points named in the colonist rate sheet, on Nov. 9, 1880, which request the Committee refer back to the Association with the recommendation that favorable action be taken."

After discussion it was adopted as amended.

On motion, properly seconded, the second section was laid on the table.

The following letter was read by the Secretary, and referred to the General Committee for report:

"WASHINGTON, Pa., Sept. 20, 1880.

"To the President of the Railway Ticket Association:

"Could your Association discuss the propriety of having all the railroads of the United States run on the same time, which could be some mean-time, and be known as the 'Railroad Time of the United States.' It would systemize—printed time-tables, be of the greatest service to traveling men, and would regulate the discrepancies from Maine to Louisiana, and from East to the extreme West, at least as far as Leadville or Salt Lake.

Please present this to your Association. Yours truly, B. CLARK."

The General Committee reported as follows:

"The General Committee to whom the communication from B. Clark, of Washington, Pa., was referred would respectfully report that they consider it a matter for action of the General Managers, and not in the province of this Association."

SECOND DAY.

Convention called to order at 10:30 a. m., President W. B. Shattuc in the chair.

The Chair announced that in consequence of a change in the administration of one of the Southern roads, there was a vacancy in the Executive Committee, Mr. Macmurdoo retiring, and appointed Mr. James S. Davant to fill said vacancy.

No objection being offered, it was so recorded.
The Chair then called the attention of the Association to the fact that a gentleman had joined the Association, who, he was informed, according to the by-laws, was not entitled to membership.

On motion the matter was referred to the Executive Committee for report.

Mr. C. A. Taylor offered the following resolution, which was adopted unanimously:

"Whereas, Since the last meeting of this Association, Mr. J. M. Broadus, General Ticket Agent of the Washington City, Virginia Midland & Great Southern Railroad, has been removed from our midst by death; Therefore, be it

"Resolved, That in the death of Mr. Broadus this Association loses a valued and trusted member, and that, in token of the regard and esteem in which this worthy gentleman was held by his associates, this resolution be spread upon the minutes, and a copy of the same be forwarded to the family of the deceased by the Secretary."

The following was offered:

"Resolved, That the by-laws be so amended as to make the second order of business—which is the election of officers—come immediately after miscellaneous business."

Adopted unanimously.

On motion the following resolution was adopted by a vote of 16 ayes to 11 nays:

"Resolved, That on and after Nov. 1, 1880, the excess baggage rate per 100 lbs., between all competing points, shall be 10 per cent. of the regular first-class unlimited rate."

A lengthy discussion ensued as to whether the rate for corpses should be one first-class "unlimited," or "limited" rate, as also the question whether the corpses of those under twelve years should be carried at half of the agreed rate.

The Chair desired the Secretary to read the action that had been taken at the last meeting of the Association in respect to the transportation of corpses.

The Secretary read as follows:

"Resolved, That the rate for corpses shall be one full unlimited first-class fare, regardless of age."

Whereupon the following was offered:
"Resolved, That the rate for corpses shall be one full limited first-class fare, regardless of age."

It was deemed undesirable to change the existing rates for the transportation of corpses, and on motion the whole matter was laid on the table.

The Chair instructed the Secretary to communicate with the Chairman of the Committee of Rates and learn the time at which they expected to conclude their labors.

The Secretary reported that they did not expect to get through until 5 p. m. on the 23d.

On motion, the meeting adjourned until 11 a. m., Sept. 23, 1880.

THIRD DAY.

Convention called to order at 11 a. m., President W. B. Shattuc in the chair.

On motion, duly seconded, the matter of transportation of corpses was taken from the table for reconsideration.

On motion, duly seconded, the following was adopted as a substitute for the motion offered at the previous session:

"Resolved, That the rate for corpses shall be the limited

first-class rate for those over 12 years of age, and one-half limited first-class rates for those under 12 years of age."

After some further discussion on the subject, it was moved to lay the whole matter on the table.

The question was put by the Chair, the result being a tie vote. The Chair announced the subject as still before the Association.

After some further discussion on the subject, it was again moved to lay the matter on the table, which motion, after being seconded, was put by the Chair and carried.

The Chair announced that the General Committee and Executive Committee had no reports to make to the Association.

The following resolution was adopted unanimously:

"Resolved, That this Convention authorize its Secretary to examine the rates as made by the Rate Committee, and to publish the same as the rates of this Association, to take effect Nov. 1, 1880."

The following was also adopted unanimously:

"Resolved, That the thanks of this Association be tendered to the gentlemen who have charge of these rooms, for the very pleasant manner in which they have afforded us an opportunity of meeting here."

On motion the Association adjourned, to meet in St. Louis, March 1881.

The Canadian Pacific Bargain.

In the absence of official information about the terms on which the syndicate is to take over, complete, and work the Pacific Railway, Rumor finds her opportunity. Speaking through the *Globe* and other journals, she says the consideration to be paid is 25,000,000 acres of land and \$25,000,000 in cash. The accuracy of this statement has not been denied; and as it has several times been repeated, during a full week, in presence of persons able to contradict it, if the figures were incorrect, we are justified in accepting them provisionally, as representing the true state of facts. We assume, then, that the syndicate is to get 25,000,000 acres of land and \$25,000,000 in cash.

What then? In return for this land and this money, what are we to get? Is the syndicate to complete the whole line or only part of it? That is the important question? "The price," says the *Globe*, and on this point we fully agree with that journal, "is not too much for the completion and maintenance of the whole road from Lake Nipissing to the Pacific," though in further agreement with our contemporary, we think it would be "very much too high for the line across the plains." We are not without reasons for believing that, for the price agreed upon, whatever it may be, the whole line is to be completed. In that case, no objection remains as to the price to be paid for the completion of the road; the price is not too much.

If we are right in conjecturing that the whole line is embraced in the bargain there is not left much room for criticism. To the principle of a land payment, all parties are agreed. If the government had undertaken this great work, the payments would have been sure; they would have been both heavy and burdensome, at least for some years (five or ten) to the people of the old provinces. The amount of money would not have been less than seventy-five millions of dollars, and it might have been one hundred millions for the complete railway. The proceeds from the sale of the vast extent of lands in the hands of the Dominion government would, probably, under good administration, have paid in time, the principal of this large sum of money. But would there have been no waste in the administration of that large sum of money? Would not the battle of party politics have impeded successful settlement? The experience of the past has, so far, unfortunately taught that both these questions must be answered in the affirmative. And this would have been a most serious drawback to any advantages which could be alleged in favor of the government constructing the road. There is a further not less serious and more practical point for all men who are engaged in commercial pursuits, and that is, that in the earlier years of the construction, the drain might have been so serious, burdensome as to cause a depression.

These dangers are avoided by handing over the completion of the road to a company, to be paid for, in large part, by the transfer of public lands. Regarding the effect of such transfer, we are, fortunately, not without experience, since the Western United States have, within the last ten years, made large payments in this way. The Washington government has granted from the public domain of the United States, within the last ten years, one hundred and ninety-eight, or we may say, in round numbers, two hundred millions of acres, for promoting railway construction. What has been the result? Many thousands of miles of railways have been constructed; many thousands of immigrants have been brought to settle on the lands of the Western States; prodigious wealth has been created and cities have arisen as if by magic.

What we may call the commercial instinct of companies of this kind imposes upon them two guiding principles which must be actively, and under all conditions, everywhere asserted. The first is, that they must sell their lands, in order to get money to go on with; and the second, they want population and products for running their roads. And here the paramount advantage of this system is, that the commercial instinct, truer and keener, will go more directly to its end than is possible for a party government to do with the serious drawbacks to which it is exposed. The locking up of lands in comparatively small parcels in the hands of private speculators, who simply fold their arms, and quietly watch the development of improvement around them, to which they do not in the slightest attempt to contribute, is a very different kind of thing, and it is in principle a serious evil.

The latest example of the railway land companies in the United States is afforded by the operations of the St. Paul, Minneapolis & Manitoba, of which Mr. R. B. Angus, the late General Manager of the Bank of Montreal is now Vice President. This company is in possession of several million acres of land, and the success of its methods in attracting settlers is said to be quite remarkable. For machinery, it has a regular land department, and an office and agent in England. Its advertising agency is most active, its publications being seen everywhere. It charges a fair and very moderate price for its lands, in comparison with the prices at which other lands in the Western States are sold, the proceeds of which come to very large figures, and not only cover its large expenses for propaganda, but make its own finances sound and easy; in fact, lucrative to the proprietors, with, at the same time, very large pleasures of hope. One of the admirable features it adopts is to give large drawbacks to the purchaser and settler on the number of acres broken. The effect is manifold. It is very attractive to the settler, and puts the simple speculator, who would buy and lock up lands, at a great disadvantage. It insures rapid settlement and traffic for the road. The wild is peopled, and a great civilization is arising. The capital value of every settler to the United States, at the very least calculation, being worth a thousand dollars, the government practically, though indirectly, gets enormous payment for the land it has given to build the railway.

Such is the indubitable fact, and it is the result of the operation of the commercial instinct of the corporation to

which we have referred. Mr. George Stephen, Mr. R. B. Angus, Mr. D. A. Smith, Mr. James Hill and others, did not take up that enterprise from any benevolent or philanthropic motives, but with the object of making all the money they could. The surest and best methods to do this were by the use of such means as we have described; and the principles which moved them are of universal application.

Almost the same remarks may be made of the Northern Pacific Railroad Company. This company has a large domain, both in Minnesota and Dakota. Its advertising machinery is understood to be much more extensive and effective than that of the Canadian government, and not subject to the same drawbacks of adverse criticism, either of party or faction: its success is very remarkable. We noticed in the accounts of one of these companies, in one year, as much as half a million dollars charged to the land department. If any such sum were voted to our own Immigration Department the Parliament and press and the Immigration Committee would grow wild, and the howl that would be raised would almost render nugatory any good effects from the money, if an attempt were made to expend such a sum.

We do not, for these reasons, see any practical objection to giving 25,000,000 acres of our public domain in the Northwest as a part of the price of building the Pacific Railway to a great company. The lands, of course, will only be handed over as the work progresses, the company being sure of getting possession as fast as the progress of the work will warrant.

The amount to be paid in money, if it has been correctly stated, is large; but large as it is, it has the merit of being a definite amount. The theory probably is that an additional quantity of land can be sold, out of which this sum can be realized, sooner or later. This we take to be the meaning of the assertion frequently made that the road will not, in the end, lay any burden upon the country. But if the railway fund is to be made out of the proceeds of the sale of lands, the sales will have to be made on the best terms possible which will imply the least possible restrictions, if any, upon purchasers in the way of conditions which, though under circumstances desirable, might prove repellant.—*Canadian Monetary Times*, Sept. 24.

RAILROAD LAW.

Compensation for Grade Crossings.

In one of the numerous cases relating to the entrance of the Chicago & Western Indiana into Chicago and its crossing of the Lake Shore tracks there, Judge Loomis, of the Cook County, Ill., Court, made some statements of the law of the case which are of general interest. The Lake Shore and the other defendant roads moved to strike out all the testimony which had been introduced, on the ground that evidence had not been introduced to support the action,—that is, no evidence as to the necessity of taking the right of way, or easement, across the Lake Shore tracks,—and upon the ground that the evidence introduced as to the value of the property taken was not a proper estimate of the damages in the case.

Judge Loomis gave an opinion overruling both of these points, and standing by previous decisions made by him involving substantially the same questions. As to the first point, the Judge holds, in the language of the Supreme Court, that "The courts have a right to determine whether use for which property is taken is public or not; but when it is public a court has no right to inquire into the question of the power of eminent domain." The Court thinks that covers the question of the necessity of the taking of the particular property, so far as the proceeding in the court is concerned. If the power of eminent domain were used for unreasonable purposes, it would and could be checked. But to have the question of necessity the question to be passed upon, upon which evidence is to be introduced which is for the purpose of ascertaining compensation, is, not, he thinks, anything that the Court is qualified to try.

As to the question of compensation, he holds by his original opinion, that a railroad company is not entitled to recover for any interruption to its business or the franchise of the road, since it has no right to the uninterrupted user. When tangible property is taken, then compensation may be recovered. The respondent took its franchise subject to the right of the sovereign power by itself or other roads to cross that right of way by paying for the actual property taken and actual tangible property damaged, but no further, because that right-of-way is so a right to an uninterrupted user. If interruption is caused to the business of the respondent to a certain extent, the best authorities are that that is a damage which cannot be recovered in an action like that at bar. The possession by the Chicago & Western Indiana, if it laid its tracks as contemplated, was not an exclusive one. It could not exclude the respondents from the free use of the property,—from crossing it with its trains, and from laying its tracks down on that right-of-way.

Mr. Withers, defendant's counsel, asked what would be the case if the evidence showed that it were impossible for the property to be so used that the respondents would not be injured.

The Court thought that, if the evidence showed that the Western Indiana could not cross there without destroying the franchise of the Lake Shore, then the courts would probably interfere to prevent entirely the crossing. But the fact that this crossing might interrupt the business of the respondent, or interfere with it, was a condition of things which any railroad company might expect,—that is, no railroad could buy its right-of-way through a city with the expectation that it would not be crossed by other railroads. If, in the taking by the Chicago & Western Indiana of this right of way, damage was done to real estate belonging to the respondents, or to buildings thereon, then they would have the right to recover for that damage, and to show that the property was specially valuable on account of its adaptability for railroad purposes. But that could not be shown by showing the extent of business done over it any more than the value of the land on which Field & Leiter's store stood could be determined by showing the amount of business transacted in the store.

Condemning Land Owned by Other Companies.

In the North Carolina and the Richmond & Danville companies against the Carolina Central Company, the North Carolina Supreme Court lately held as follows, after deciding that the right of the defendant company to condemn lands was sufficiently established:

Land obtained under a legislative grant of the right of eminent domain is no more exempt from its exercise when the public interest requires it for public uses than other lands held by individuals. Each must be subordinate to the demand of the state for public and useful purposes.

The exercise of the power of eminent domain over the property of public corporations may be subject to limitations not strictly applicable to other property.

The laying down of a track eight feet from the track of another road will not seriously, if at all, disturb the operations of the latter, or their putting down and using a second track, when required, for an enlarged transportation in the future.

By chapter 263, acts of 1874-75, the right to construct and operate lines of telegraph along any railroad or other public highway in the state, and to obtain the right-of-way

therefor by a condemnation proceeding, is conferred upon any incorporated telegraph company. Why, when a similar privilege is demanded by one railroad from another, involving the common use of the same land by separate and non-interfering tracks for a few hundred feet only, and when this is the only route by which its own depot can be reached, should it be denied to the defendant company?

Claims for Land Damages.

In Church against the Grand Rapids & Indiana Company, the Indiana Supreme Court held that damages to land, remaining uncollected, whether duly awarded or in suit, are personal property and do not pass with the land when sold. The damages revert to the benefit of the person who owned the land when the right-of-way was taken and the railroad built, and the right of suit is with him or his legal representatives. Consequently suit to recover damages cannot be brought by a subsequent purchaser of the land crossed by the road.

THE SCRAP HEAP.

The Inspectors' Report on the Stonington Disaster.

The inspectors who were charged with investigating the collision between the steamboats *Stonington* and *Narragansett* on Long Island Sound, have made a report, which is summarized as follows in a dispatch from Washington:

"They find, after a careful review of all the testimony and circumstances of the collision, that George F. Nye, Master of the *Stonington*, did, or through his pilot, after the course for the *Narragansett* without giving proper signals as required; that he failed to stop his steamer without locating the *Narragansett* or until proper signals could be given, answered and understood as required; upon sighting the *Narragansett*, through carelessness or forgetfulness, the signal was given to start the steamer, which caused the collision. Upon his own admission, there was found in Captain Nye a disposition to totally disregard the law as far as it relates to the conveyance and transportation of a greater number of passengers than allowed by law, and in consequence thereof he is liable to the penalty prescribed by Section 4,413 for the violation of pilot rules; and that also his license as master and pilot would be revoked had it not already expired by limitation. The inspectors find that Captain Young, Master of the *Narragansett*, proceeded upon his trip without the engineer's department of his steamer being in charge of a chief engineer, as required by law; that while claiming to be in charge of the whole of his steamer and responsible for her navigation, upon sighting the *Stonington*, and after the signal had been given to slow and stop, through carelessness or excitement, the signals were given to go ahead, thereby forcing his steamer across the track of the *Stonington*, and also contributing to the collision of the two steamers. Captain Young is also charged with poor judgment for leaving his steamer in a life-boat with his pilot so soon after the collision, with so many passengers remaining on board, and in consequence of this and other violations, his license as master and pilot of steam vessels is revoked. The steamship company is censured for not providing the *Narragansett* with a complement of licensed engineers and the number of watchmen required by law."

Trial of the Screw Lever Dump Car.

A trial of a dump car of the pattern made by the New England Car Co. was had at Brookline, Mass., Sept. 22, and it is thus described by the Boston *Herald*: "The car is 32 ft. long, weighs 19,361 lbs., and contained 33,593 lbs. of coal. What has been claimed by the company for its invention was that coal and gravel could be dumped inside of three minutes, thus saving much time and the work of a large number of laborers. All things being in readiness, a medium-sized man turned the crank, the machinery responded, the car tipped, the coal was dumped out where desired, and the car body went back into place, the whole time consumed from the start to the finish, as one might say being less than two minutes. It was then operated slowly from one side to the other to show its small way of construction, and the ease with which one man could handle it. The car has been tested, with like results, with loads of gravel, but a dump and dry. The gentleman present at the trial yesterday expressed themselves entirely satisfied with the workings of the car and its simplicity, strength and durability. The business of the company will now be actively pushed."

Wouldn't Be Discharged.

Jimmy Rafferty, who was in the car greasing department in the Chattanooga yard for the past 30 years, and more recently a watchman in the yard, died yesterday at an advanced age. About a year and a half ago the old man was told that his services would be no longer required. The following morning, however, he came to the yard and went to work. When asked why he had returned he said that he had to work for his living; that he had been in the yard for 30 years and he would remain in it until he died, and he kept his word. He was given the position of watchman, and continued to do faithful service until stricken down.—*Nashville (Tenn.) American*, Sept. 23.

Shutting up a Paymaster.

A letter to the *Chicago Tribune* from Centerville, Ia., of recent date, says:

"The Missouri, Iowa & Nebraska, or Iowa, Missouri & Nebraska, as you please, according to the status of injunction suits filed against it, is having considerable trouble with its extensions at Garden Grove. It appears that Kavanaugh, from this city, one of the contractors, became dissatisfied with the allowance made by the company, and did not pay his men. The graders accordingly, last Friday, piled up a lot of ties on the track, took a seat on them and blocked the tracklayers. They proposed to stick until they got their pay. The tracklayers made no resistance, but laid down their tools and quit. The Paymaster of the road put in an appearance, and, going to Kavanaugh's headquarters, proceeded very deliberately to pay the money direct to the men instead of to Kavanaugh. When evening came he began to haul off and make excuse for not paying out more money, and, shouldering his grip, started for his supper. The graders followed and surrounded the house, and demanded the \$2,000 yet unpaid. He declared he had not the money, but he would pay it if they would go to Centerville, the headquarters of the company. The men did not accept the proposition. A team was brought to the door, when the Paymaster quickly leaped into the wagon and skipped. Instantly pandemonium let loose was at his heels. Horses, mules and men rushed at furious rate to overtake him, and, for over three miles, the chase was an exciting one. He was captured and brought quietly back and given to understand that he could not leave until the men were paid. He resumed payment, and kept at it through the night, when he ran out of money, after paying several thousand dollars, which only incensed the men and confirmed their belief that he was attempting to swindle them. He was kept in town several hours, when several influential citizens assured the men he had no more money, and he was then allowed to depart, and a committee went down with him to see Gen. Drake, President of the road. The committee got boisterous, and threatened to take the Paymaster and the engine back if they were

not paid. The Sheriff was called out with a posse to arrest the men, but finally wiser counsel prevailed, and Gen. Drake ordered the men taken back, according to promise, with the assurance that they should be paid. Meanwhile the men hold the fort, and will allow no progress to be made until they get their pay."

Remarkable—If True.

A special dispatch from Springfield, Ill., Sept. 22, to the Chicago Tribune says: "One of the most remarkable railroad accidents on record, which appears to have heretofore been kept out of print, occurred at Caseyville, on the Ohio & Mississippi, Friday night. The passenger train leaving St. Louis that night was drawn by an engine just from the shops, where it had been completely overhauled and partially rebuilt. The engine behaved first-rate until the Caseyville whistling-post was reached. When the engineer then attempted to shut off steam to slow down, he was thrown back on the tender and partially stunned. Recovering, he sprang forward to stop the engine, but was inexpressibly astonished to see before him nothing but the end of the fire-box, the front of the cab, and the tubes of the boiler. The train was still running, having passed through the town, but soon stopped. It was then discovered that the boiler had exploded, the force being spent forward and upward, so that the wheels remained on the track, while the momentum kept the train in motion. The strangest part of the affair is the fact that neither the engineer nor any one on the train heard the noise of the explosion. The conductor ordered on the brakes without hearing the engineer, because the train passed the town without stopping. The accident is one of the most peculiar in railroad history."

Other accounts received indicate that, while the engine was not thrown from the track, but ran a short distance, the engineer and others on the train were very well aware when it took place. The destruction of the boiler also was much less than indicated by the above dispatch.

Sparrows.

The Eastern Railroad Company has just paid a Lynn hackman \$1,100 for injuries sustained by a train striking him. Queer how these things happen. Up in Niagara they would undoubtedly pay a railroad company \$1,100 for running over a hackman.—*Boston Commercial Bulletin.*

While the editor of the *Norfolk County Gazette*, a little weekly paper published at Hyde Park, near Boston was writing a thrilling leader the other day on the issues of the present crisis, a man rushed in and with excited manner told him that 21 lives had been lost by an accident on the New York & New England Railroad. Then he rushed out again as if in a terrible hurry. The newspaper man yelled and tried to stop him but it was no go, so he had no other course than to go out and investigate. He found 21 dead sparrows lying killed by the express train, or, at any rate, the Boston Advertiser said he did. He was mad. We don't blame him. In fact, we should think it much more creditable that 21 people should be killed by a railroad accident than that an express train should kill 21 sparrows, whatever the Boston Advertiser and the *Norfolk County Gazette* may say to the contrary. A sparrow is nearly as hard to kill as a goat, and we wouldn't believe that yarn if Eli Perkins or Ananias himself should make affidavit to it.

The Ft. Wayne *Sentinel* thinks that a railroad collision is a bang-up affair.

An Austrian court has before it the question whether a breach of good manners constitutes negligence. There was a slight collision on a railroad over there, and in one of the coaches a man was just in the act of putting a piece of sausage in his mouth with a knife, when the shock of the collision made him cut his cheek badly. He sued for damages, but the company pleads in defense that to eat with one's knife is a gross breach of good manners, and it should not be called on to pay damages to a man whose injury was plainly caused by his defiance of the laws of polite society. It is a knotty question, and the court is sitting up nights to think it over.

A gentleman was explaining to a French railway station-master that the English had a system of allowing travelers to move about freely. "But," said the station-master, "you do not know the French. They would be all over the place." The wife of an engineer on the Philadelphia & Erie Railroad attempted an innovation upon the old established modes of suicide. She went down to the railroad, and when her husband's locomotive came along, threw herself on the track before it. Instead, however, of being cut into infinitesimal atoms, she was hauled away by a neighbor who had been watching her.—*North American.*

The Boston *Post* says that even a deacon won't ask a blessing in a railroad dining saloon. He knows it is asking too much to be made thankful for what he will get there.

In a railroad dining saloon. Indignant passenger shouts: "Waiter! where is the proprietor? I insist upon seeing him at once!" The waiter surveys indignant passenger and coolly replies: "You don't think the boss eats his dinner here, do you? He knows too much for that."

Indelible India Ink.

Draughtsmen are well aware of the fact that lines drawn on paper with good India ink which has been well prepared cannot be washed out by mere sponging or washing with a brush. Now, however, it is proposed to take advantage of the fact that glue or gelatine, when mixed with bichromate of potash, and exposed to the light, becomes insoluble, and thus renders India ink, which always contains a little gelatine, indelible. Reichenbichler, the discoverer, calls this kind of ink "Harttusch," or hard "India ink." It is made by adding to the common article, when making, about one per cent, in a very fine powder, of bichromate of potash. This must be mixed with the ink in a dry state; otherwise, it is said, the ink could not be ground up easily in water. Those who cannot provide themselves with ink prepared as above in the cake, can use a dilute solution of bichromate of potash in rubbing up the ink; it answers the same purpose, though the ink should be used thick, so that the yellow salt will not spread.—*Workshop Companion.*

Prizes for Improved Cattle Cars.

A dispatch from Chicago, Sept. 20, says: "Edwin Leo Brown of this city, President of the American Humane Association, will announce in the Chicago papers to-morrow that the time for receiving models and plans of an improved cattle car for the transportation of cattle has been extended until the 1st of next January. The prize offered by the Association for this design is \$5,000 and the money is already in the treasury. The design may be either of a car entirely new in construction or such modification of existing cars as will best protect the animals that are being taken to market."

The conditions under which this prize is offered have already been published in full.

Railroad Advertising.

The Chicago, Rock Island & Pacific Railway has had an elegant picture placed in the Exposition. It is a new device in pictorial railway advertising, and reflects considerable credit upon Mr. John C. Rettenburg, the car decorator of the company. The picture is painted in oil, and is some 25

by 12 ft. in size. In the upper left-hand corner is a faithful picture of the exterior of the Chicago depot, while on the upper right-hand corner is a representation of the interior of the same building, both of which are very natural in appearance. The Kansas City and Council Bluffs depots are pictured in the other corners, while in the centre is an excellent representation of the interior of a dining car, which is the best feature of the work, for it shows the car in all its departments. The portraits are good, while the panels, seats and other parts are painted in the same colors and shades as the original. A fine map of the road completes the picture.—*Chicago Inter-Ocean.*

Cost of a Street Railroad.

At the close of an interesting paper, chiefly historical, on "Horse Railroads," read before the Western Society of Engineers at Chicago, Sept. 7, by Augustine W. Wright, Engineer of the North Chicago City Railway, the following itemized statement of the cost of a mile of horse railroad in Chicago at the present time is given:

COST OF ONE MILE OF DOUBLE TRACK AS NOW LAID BY NORTH CHICAGO CITY RAILWAY, 1880.

Labor and teams, including necessary excavation.....	\$ 3,875.52
2,640 cedar cross ties laid 4 ft. centre to centre 8'0" x 5'0" at 30 cents.....	792.00
21,120 lineal ft. pine for stringers 5'0" x 8'0" at \$10 per M. B. M. 70,400.....	704.00
Beading and handling same at \$5 per M. B. M. 70,400.....	352.00
6,160 cast iron L angles at 8 lbs., at 3 cents per lb. = 24 cents.....	1,478.40
704 cast iron chair joints at 19 lbs. at 3 cents per lb. = 57 cents.....	401.28
7,040 yards Bessemer steel rail at 45 lbs. per yard = 316,800 lbs. = 158.4 short tons at \$67.....	10,612.80
11,616 rail spikes, counter-sunk heads, 5'0" x 1/2" x 1/2" = 4,148 lbs. at 5.16 cents.....	214.04
18,480 rail spikes, counter-sunk heads, for L irons 4'0" x 1/2" x 1/2" = 5,133 lbs. at 5.16 cents.....	264.86
	\$18,694.90

Paving 5,280 lineal ft. x 24'4"-22' horse paths with cobble stone = 4,880 square yards at \$1.84.....	9,005.76
Paving 5,280 lineal ft. x 6 ft. with cedar blocks = 3,520 square yards at \$1.10.....	3,872.00
	\$31,572.66

ITEMIZED COST OF PAVING TWO HORSE PATHS ONE MILE WITH COBBLE STONE 5,280 LINEAL FEET x 24'4"-22' = 4,880 sq. YARDS.

1 cord of our av. cobble stone lays 22 sq. yds. = 222 2/3 cords at \$20.....	\$4,445.00
Hauling above stone from company's yard at \$1 per load.....	777.88
Hauling above stone from yard to track on the street at \$1 per load.....	777.88
Gravel 4' deep = 544 cubic yards at \$1.75 on track.....	952.00
Hauling 544 cubic yards from track to yard at 75 cents.....	408.00
Hauling 544 cubic yards from yard to track on street at 75 cents.....	408.00
Gravel top dressing 1' deep = 136 cubic yards at \$1.75.....	238.00
Hauling above yard = 136 cubic yards at 75 cents.....	102.00
Hauling above from yard to street = 136 cubic yards at 75 cents.....	102.00
Paver 100 days at \$2.50.....	250.00
Rammer 100 days at \$2.....	200.00
Laborer 212 days at \$1.50.....	318.00

Total cost of 4,880 square yards of cobble stone pavement.....	\$9,005.76
Total cost per square yard.....	1.842

Concerning the method of construction Mr. Wright said: "This great and growing traffic now requires the track to be constructed in the most substantial manner, and as the annexed estimate will show you involves an expense of \$31,572.66 per mile of double track. The North Chicago City Railway Company lays cedar cross-ties 8 ft. by 6 in. by 8 in. every four feet, and upon them a longitudinal stringer of Norway pine 5 by 8 in. dressed with a 'bead,' fitting a corresponding recess in the head of the rail. The rail which it assists in holding in line. A cast-iron L iron is securely fastened, with two spikes driven into the cross-tie and one into the stringer, upon the outside of each stringer upon every cross-tie, and the same upon the inside of the stringer at the joints of the latter. The constant tendency of the track is to spread—it never becomes narrower. The rail * * * is of Bessemer steel, weighing 45 lbs. per lineal yard. The cross-ties and stringers are securely tamped with iron bars, thus giving a continuous solid support. The rails are always laid to break joints with the stringer, and the rail joints are supported on iron chairs cast to conform accurately to the rail, 20 in. in length. All castings for switches and frogs are obtained from Wm. Wharton, Jr., of Philadelphia, who possesses an enviable reputation for first-class work. His prices on board cars are 4 cents per pound for castings and 6 1/2 cents per pound for his patent steel-grooved rails curved to suit. Cobble stones of suitable size and quality, in our estimation, makes by far the best pavement for our horse-paths, estimating as we do that our horses last 25 per cent. longer traveling upon it than upon the slippery wooden blocks. This fact, together with its greater durability, more than offsets its greater first cost. It requires no argument to convince any humane man of its great benefit to our horses, for it is only necessary to witness the painful struggles of the poor animals upon the slippery wood upon a winter's day, and then to see the ease and freedom with which they travel when the cobble-stone pavement is reached. My estimate of \$1.84 per square yard for cobble-stone pavement is very liberal, as the annexed figures will show you."

British Rail Exports.

For the month of August and the eight months then ending the exports are reported as follows by the Board of Trade:

	1880.	1879.	Increase.	P. c.
August:				
Iron rails.....	8,207	2,351	5,856	249.6
Steel rails.....	44,329	38,530	5,799	15.0
Total.....	52,536	40,881	11,655	28.5
Eight months:				
Iron rails.....	102,733	25,574	77,159	301.8
Steel rails.....	331,686	223,153	108,533	48.6
Total.....	434,419	248,727	185,692	75.0

The enormous increase in the exports of iron rails is especially noticeable. Last year it looked as if the demand for iron rails had about ceased, and that there would thenceforth be little object in continuing their manufacture. But this year the exports have been four times as great as last. The increase in the amount of steel rail exports, however, is greater than that in iron.

The exports to the United States began to make some figure in August last year. For the month and the eight months they have been, both steel and iron:

	1880.	1879.	Increase.	P. c.
August.....	16,311	4,719	11,592	245.5
Eight months.....	159,244	13,676	145,568	1064.4

The exports for the eight months are more than eleven times as great as last year, and the August exports are something less than the average for the year, but still considerably above the United States exports of the months immediately previous, when it seemed as if the fall in the price here was likely nearly to put an end to other exports than those

on contracts already made. The exports to the United States were 14,845 tons in July.

A Colored Woman Saves a Bridge.

The bridge on the Washington & Ohio Railroad, near Carlin's Springs, was discovered to be on fire yesterday morning. As the train to this city on the road, about 7.30 o'clock, approached Carlin's Springs, it suddenly came to a stop. It was found that the bridge, 20 or 30 feet long, was on fire (supposed to have been set on fire), and an old colored woman was busily engaged in trying to put it out. Some of the train hands and passengers went to her assistance and extinguished the flames, and the bridge being hastily strengthened, the train came over it safely, being about 30 minutes late. The conduct of the old woman was highly commended, and the passengers raised a purse of \$10 and presented her.—*Alexandria (Va.) Gazette, Sept. 21.*

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Pullman Palace Car Co.

This company's report for the year ending July 31 gives the following financial statement:

Stock.....	\$5,000,000.00
Bonds.....	2,470,000.00
Amount received from sale of old cars leased from Central Trans. Co.....	419,003.81
Surplus.....	4,395,109.45
Total.....	\$13,280,313.26
Cost of 472 cars and equipments, including franchises.....	\$8,588,614.08
Detroit car works.....	364,468.79
Chicago car works, under construction, cost to date.....	230,125.86
Patents, United States and foreign, cost.....	184,383.43
Furniture and fixtures of 52 offices.....	63,655.64
Real estate, Chicago.....	22,001.66
Amount invested in other car associations controlled and operated.....	2,440,621.26
Construction material and operating supplies, including amount paid on cars in construction.....	718,879.47
Balance of current accounts.....	385,176.30
Cash on hand and in bank.....	282,386.77
Total.....	\$13,280,313.26

The bonded debt consists of \$1,593,000 currency 8 per cent. debentures, whereof \$328,000 are due May 15, 1881, \$445,000 due Feb. 15, 1887, and \$820,000 due Aug. 15, 1892; \$767,000 currency 7 per cent. debentures, due Oct. 15, 1888, and \$116,000 sterling 7 per cent. debentures, due April 1, 1885. The surplus fund is included in the following accounts:

Guarantee fund.....	\$15,728.55
Depreciation account, formerly sinking fund, to provide for possible depreciation in value of franchises and patents.....	800,000.00
Income account.....	3,579,380.90
Total.....	\$4,395,109.45
The course of this surplus fund during the year has been as follows:	
Sum of surplus accounts, July 31, 1879.....	\$3,737,330.97
Written off for cars sold and destroyed, replaced by new ones.....	\$34,686.82
Written off in settlement of claims for cars destroyed in Pittsburgh riots of 1877.....	18,608.12
Doubtful accounts written off.....	20,808.77
Total.....	\$3,163,719.26
Balance.....	\$3,654,167.26
Add surplus from income, as below.....	740,942.19
Surplus, July 31, 1880.....	\$4,395,109.45

The stock was increased by \$52,000. Changes in the

bonded debt were a decrease of \$102,000 sterling bonds, and an increase of \$568,000 in the currency 7 per cent. debentures, a net increase of \$466,000. Eight cars were added to the equipment. The stock is now \$12,691; bonds, \$5,246 per car owned.

The income account is as follows:

Earnings, leased lines included.....	\$2,051,299.81
Proportion of earnings of sleeping car association controlled.....	527,902.77
Patent royalties.....	14,022.50
Profit and loss, including interest, discount and exchange.....	42,243.43
Total.....	\$2,635,468.51
Operating expenses, including taxes, insurance, etc.....	\$433,777.12
Maintenance of upholstery and bedding.....	139,134.12
Proportion of expenses of associations controlled and worked.....	179,136.42
Net earnings.....	\$1,080,420.85
Rental of leased lines.....	\$204,000.00
Interest on bonds.....	472,876.24
Dividends on stock, 8 per cent.....	472,876.00
Balance of account for rebuilding and remodeling cars.....	33,623.42
Total.....	\$939,478.66

Surplus to credit of income..... \$740,942.19

The expenses of working, maintenance, etc., were 36.24 per cent. of gross earnings. The earnings for the year, excluding royalties and receipts from controlled lines, were \$4,346 per car owned. A comparison with last year is as follows:

	1879-80.	1878-79.	Increase.	P. c.
Gross receipts.....	\$2,635,469	\$2,196,735	\$438,734	20.0
Net earnings.....	1,080,421	1,238,269	442,152	35.7
Rentals and interest.....	\$433,079	\$429,890	\$3,080	0.7
Dividends.....	472,876	471,656	1,220	0.6
Rebuilding account.....	33,623	10,920	22,703	207.9
Surplus.....	\$740,943	\$328,403	\$412,540	125.6

The earnings, both gross and net, show a very considerable increase over last year. The expenses decreased slightly.

Detroit, Grand Haven & Milwaukee.

This company owns a line from Detroit, Mich., to Grand Haven, 189 miles. There are 35.05 miles of sidings, including a spur 2.00 miles long to Cornua coal mines, and one 0.65 miles long to the Insane Asylum at Pontiac.

The equipment consists of 36 locomotives; 28 passenger and 16 baggage, mail and express cars; 324 box, 26 stock and 124 platform cars; 4 service cars.

The road was formerly the Detroit & Milwaukee, and was sold under foreclosure Sept. 4, 1878, and transferred to purchasers Oct. 18, 1878. The stock in the present company is owned by the Great Western Railway Company of Canada and the road is operated in the interest of that company. The report is for the period from Oct. 18, 1878, to Dec. 31, 1879, but the statements of traffic and earnings are for the calendar year 1879, in order that comparisons may be made with previous years.

The general account is as follows:

Stock (\$7,937 per mile).....	\$1,500,000.00
Bonds (\$27,513 per mile).....	5,200,000.00
Accounts.....	330,019.54
Renewal and insurance funds.....	97,854.65
Profit and loss.....	50,557.07
Total.....	\$7,185,331.26
Construction and other property.....	\$7,008,073.24
Current accounts.....	104,323.49
Materials.....	25,191.96
Cash.....	47,742.57
Total.....	\$7,185,331.26

The bonded debt consists of \$2,000,000 equipment 6 per cent. bonds, and \$3,200,000 consolidated 5 per cent. bonds. A sufficient amount of equipment bonds is held to meet \$805,133.42 sectional bonds prior to the foreclosed mortgages, which mature at various dates.

The traffic for the year was as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Train miles.....	394,212	390,561	3,651	0.9
Passenger.....	390,534	358,376	32,158	9.0
Freight.....	390,534	358,376	32,158	9.0
Total revenue miles.....	754,746	748,867	5,879	0.8
Locomotive miles.....	9,816	9,816	0	0.0
Car miles.....	9,750,497	9,398,976	351,521	3.7
Passengers carried.....	434,246	409,290	24,956	6.1
Passenger mileage.....	14,643,030	13,738,443	904,587	6.6
Tons freight carried.....	444,903	373,052	71,851	19.3
Tonnage mileage.....	49,824,759	43,201,869	6,622,890	15.4
Av. train load:				
Passengers, No.....	37.15	35.17	1.98	5.7
Freight, tons.....	138.21	120.57	17.64	14.6
Av. rate:				
Per pass. per mile.....	2.77 cts.	2.80 cts.	D. 0.03 ct.	1.1
Per ton.....	1.33	1.40	D. 0.07	5.0

The average freight rate shows still a decrease, but has been lower.

The earnings for the year were as follows:

	1879.	1878.	Increase.	P. c.
Passage.....	\$406,761	\$383,392	\$23,369	6.1
Freight.....	663,629	617,991	45,638	7.4
Other sources.....	42,073	36,064	6,009	16.7
Total.....	\$1,112,463	\$1,037,447	\$75,016	7.2
Expenses.....	744,384	717,153	27,231	3.8
Net earnings.....	\$368,079	\$320,294	\$47,785	14.9
Gross earn. per mile.....	5.880	5.489	397	7.2
Net.....	1.947	1.685	262	15.6
Per cent of exps.....	66.92	69.13		

The increase, both in gross and net earnings, was very considerable. The net earnings were the largest ever reported.

The interest charges for the year were \$280,000; loss on Lake Michigan, \$26,194.26; total, \$306,194.26, leaving a balance to revenue of \$51,737.25.

For the whole period of 14 months and 13 days the receipts, etc., were as follows:

Gross earnings.....	\$1,322,202.84
Expenses.....	\$28,017.34
Net earnings.....	\$494,185.50
Interest and all other charges.....	443,628.43
Surplus, Jan. 1, 1880.....	\$50,557.07

Provision has been made from the revenue for renewal of the roadway and rolling stock, and a system of annual charges in the accounts adequate for that purpose has been inaugurated. The loss on the cargo of the Northwestern Transportation Company's steamer *Amazon*, on Oct. 28, 1879, at the entrance of Grand Haven harbor, is reported

RAILROAD EARNINGS IN AUGUST.

NAME OF ROAD.	MILEAGE.					EARNINGS.					EARNINGS PER MILE.	
	1880.	1879.	Inc.	Dec.	Per c.	1880.	1879.	Increase.	Decrease.	Per c.	1880.	1879.
Alabama Gt. Southern.....	290	290				\$ 58,701	\$ 54,807	\$ 3,894			\$ 202	\$ 190
Atchison, Top. & S. F.....	1,382	981	401		40.9	673,000	516,765	156,235			30.2	487
Burlington, Ced. Rapids & North.	492	434	58		13.4	160,160	122,827	37,333			30.4	285
Calro & St. Louis.....	140	140				39,643	26,291	13,352			50.8	271
Central Pacific.....	2,461	2,335	126		5.4	1,885,000	1,556,457	328,543			21.0	766
Chesapeake & Ohio.....	435	435				259,100	215,694	43,415			30.1	506
Chicago & Alton.....	840	840				740,842	583,832	157,010			20.9	882
Chicago & Eastern Illinois.....	220	159	61		38.4	131,777	75,300	56,477			75.0	596
Chicago, Milwaukee & St. Paul.	3,111	2,182	929		42.6	991,000	733,736	257,264			35.1	319
Chicago & Northwestern.....	2,575	2,290	285		12.5	1,771,314	1,326,937	444,377			33.5	688
Chicago, St. Paul, Minn. & Om.	294	240	54		22.5	126,144	86,695	39,449			45.5	429
Cin. & Springfield.....	81	81				75,091	77,329		2,238		2.9	927
Cleve, Col. Cin. & Ind.....	391	391				434,164	363,258	70,906			19.5	1,110
Cleveland, Mt. Vernon & Del..	157	157				30,681	29,379	1,302			4.4	196
Denver & Rio Grande.....	510	337	173		51.3	369,472	92,488	303,084			32.8	777
Denver, South Park & Pacific.	156	85	71		83.5	128,811	91,204	37,607			41.3	486
Des Moines & Ft. Dodge.....	84	84				33,103	29,171	3,932			13.5	394
Flint & Pere Marquette.....	299	290	19		6.8	130,488	88,562	41,926			46.2	436
Hannibal & St. Joseph.....	292	292				212,896	141,533	71,363			50.4	729
Illinois Central, Illinois lines.	914	854	60		7.0	560,489	494,704	65,785			14.5	620
Ind. Bloom. & Western.....	402	402				131,808	107,273	24,535			23.0	328
International & Great Northern	520	520				116,732	107,520	9,212			8.6	551
Kan. City, Ft. Scott & Gulf.....	170	160	10		10.0	85,133	68,287	16,846			17.5	274
Kansas City, Lawrence & So.....	272	167	105		63.0	50,664	41,026	9,638			23.5	186
Lake Erie & Western.....	308	301	7		21.6	127,811	67,055	60,756			90.7	341
Louisville & Nashville.....	1,702	1,107	595		54.1	795,800	443,749	352,051			79.3	469
Mar. Houghton & Ontonagon.....	86	86				133,000	99,439	33,561			47.7	1,554
Memphis & Charleston.....	292	292				80,132	19,721	60,411			306.3	274
Memphis, Pad. & No.....	115	115				16,041	11,617	4,424			45.9	148
Missouri, Kansas & Texas.....	786	786				350,695	306,335	44,360			14.5	446
Mobile & Ohio.....	506	506				136,168	106,147	30,021			28.3	306
Nash. Chattanooga & St. Louis.	454	454				169,329	142,182	27,147			19.1	373
N. Y. Central & Hudson River.....	1,019	1,018	1		0.1	3,022,855	2,546,029	476,826			18.7	2,967
Northern Central.....	326	326				453,923	316,716	137,207			45.3	1,392
Northern Pacific.....	714	644	70		10.9	208,300	210,927		2,627		1.2	292
Ogdenburg & Lake Champ.....	122	122				54,863	54,187	676			0.9	450
Paducah & Elizabethtown.....	185	185				34,303	27,331	6,972			25.8	185
Pennsylvania.....	1,880	1,872	8		0.5	3,723,355	2,982,718	740,637			24.8	1,090
Philadelpia & Reading.....	883	926		43	4.6	1,531,813	1,462,280	69,533			4.8	1,735
Pitts., Titusville & Buffalo.....	163	120	43		35.8	55,500	37,526	17,974			47.9	341
St. L., Alt. & T. H. Main Line.....	195	195				144,773	105,648	39,125			36.9	341
St. L., Alt. & T. H. Bellevue L'e	71	71				59,500	43,704	15,796			36.1	836
St. Louis, Iron Mt. & Southern.....	685	685				543,500	403,316	140,184			34.8	793
St. Louis & San Francisco.....	592	449	143		31.8	267,319	181,431	85,888			47.3	452
St. Paul, Minn. & Manitoba.....	656	558	98		17.5	232,579	188,040	44,539			23.7	354
St. Paul & Sioux City.....	509	329	180		54.7	118,352	97,867	20,485			20.9	233
Scioto Valley.....	100	100				32,384	29,205	3,179			10.8	324
Texas & Pacific.....	475	444	31		7.0	226,073	184,725	41,348			22.4	476
Toledo, Peoria & Warsaw.....	237	237				127,260	102,282	24,987			24.4	337
Wabash, St. L. & Pacific.....	1,670	1,226	444		36.2	1,185,325	820,086	365,239			44.5	710
Total, 51 roads.....	31,507	27,514	3,993	43		23,205,707	18,115,741	5,094,831	4,805		737	658
Total increase.....			3,950		12.5			5,080,906			28.1	

RAILROAD EARNINGS, EIGHT MONTHS ENDING AUGUST 31.

NAME OF ROAD.	MILEAGE.				EARNINGS.				EARNINGS PER MILE.					
	1880.	1879.	Inc.	Dec. P. c.	1880.	1879.	Increase.	De-crease.	P. c.	1880.	1879.	Inc.	Dec. P. c.	
					\$	\$	\$	\$		\$	\$	\$	\$	
Ala. Gt. Southern	290	290			390,993	254,949	136,044			53.3	1,348	879	469	53.3
Bur., Ced. Rap. & No.	492	434	58	13.4	1,285,938	884,641	401,297			45.4	2,614	2,038	576	28.8
Calro & St. Louis	149	146			252,168	158,990	93,178			58.6	1,727	1,089	638	58.6
Central Pacific	2,461	2,335	133	5.9	12,149,694	10,870,609	1,278,085			11.8	5,006	4,793	297	5.5
Chesapeake & Ohio	435	435			1,750,381	1,201,880	548,501			46.1	4,008	2,763	1,245	46.1
Chicago & Alton	840	753	87	11.6	4,855,312	3,394,388	1,460,924			46.3	5,756	4,388	1,368	31.1
Chi. & Eastern Illinois	1,680	1,559	121	7.8	778,638	520,930	257,708			47.0	4,129	3,333	797	23.6
Chi. Mil. & St. Paul	2,609	1,836	773	42.1	7,464,000	5,542,067	1,921,933			34.7	2,801	3,019	1,787	13.6
Chi. & N. W.	2,359	2,175	184	8.5	11,955,653	9,601,520	2,354,133			24.5	5,008	4,415	653	14.8
Chi. St. Paul, Minn.	271	240	31	12.9	934,783	717,298	217,485			30.3	3,440	2,949	490	15.3
Cin. & Springfield	81	81			549,847	452,462	97,385			21.5	6,788	5,580	1,202	21.5
Cleve., Col., Cin. & Ind.	391	391			2,082,232	2,141,849	59,617			25.2	6,860	5,478	1,382	25.2
Cleve., Mt. V. & Del.	157	157			270,430	242,008	28,422			11.7	1,293	1,541	182	11.7
Denver, So. Park & P.	149	85	64	75.3	1,937,344	369,887	967,457			241.9	9,177	4,705	4,472	95.2
Flint & Pere Mar.	84	84			196,340	142,635	53,681			37.6	2,237	1,008	639	37.6
Flint & Pere Mar.	296	280	16	5.7	987,593	686,181	301,412			43.9	3,336	2,451	883	36.1
Grand Trunk	1,273	1,340		107	7.8	6,807,444	5,610,015	1,197,429		21.3	3,324	4,065	1,259	31.0
Great Western	526	526			3,261,023	2,760,228	500,795			18.1	6,090	5,248	952	18.1
Hannibal & St. Jo.	292	292			1,512,933	1,134,492	378,531			33.4	5,181	3,885	1,296	33.4
Ill. Cen., Ill. lines	882	854	28	3.3	3,298,022	3,491,181	4,885,841			12.5	4,563	4,098	365	9.9
Ill. Cen., Iowa lines	492	402			1,016,246	911,048	104,298			11.4	2,528	2,208	260	11.4
Ind., Bloom. & West.	212	212			789,874	710,219	79,655			9.8	3,246	3,392	394	9.8
Int. & Gt. Northern	526	519	7	1.3	974,084	905,631	68,453			7.7	1,853	1,744	109	6.0
Kan. C. Ry. Ft. & G.	1,570	1,570			718,806	628,806	89,999			37.6	4,081	3,299	881	23.1
Kansas, C. Ry. Law & So.	255	167	88	52.7	457,242	296,301	161,044			54.4	1,703	774	10	1.1
Louisville & Nash.	1,436	990	446	45.0	5,580,116	3,491,759	2,088,359			59.6	3,886	3,527	359	10.2
Marq., Hought. & Ont.	86	86			549,186	371,221	180,969			45.9	6,821	4,317	1,964	45.0
Mem. & Charleston	292	292			947,945	498,297	149,646			30.9	2,219	1,706	513	30.9
Mem., Paducah & N.	115	115			130,395	100,517	29,788			20.6	1,133	874	259	20.6
Missouri, Kan. & Tex.	786	786			5,660,704	1,807,808	848,806			47.0	3,380	2,300	1,080	47.0
Mobile & Ohio	506	515		9	1,760,613	1,073,217	297,396			19.3	2,531	2,084	447	21.3
Nash, Chatta. & St. L.	454	454			1,345,626	1,113,659	231,967			20.8	2,964	2,453	511	20.8
N. Y. C. & Hud. R.	1,018	1,018			21,628,649	17,898,419	3,730,230			20.8	21,246	17,582	3,664	20.8
Northern Central	326	329			3,120,012	2,775,691	344,321			28.0	6,571	7,394	1,967	28.0
Northern Pacific	680	644	36	5.9	1,353,579	1,112,403	241,089			21.7	1,901	1,728	263	15.2
Ogdensb'g & L. Cham	122	122			344,530	297,150	77,380			29.0	2,824	2,190	634	29.0
Pad. & E. town	181	185			244,358	184,114	60,244			32.7	1,321	995	326	32.7
Pennsylvania	1,809	1,716	93	5.5	26,067,074	21,179,085	5,437,389			25.6	14,708	12,344	2,365	19.3
Phla. & Reading	921	855	66	7.7	11,014,115	9,490,470	1,543,645			16.3	11,948	11,065	883	8.0
Pitts., Titusv. & Buff.	153	130	33	27.5	372,672	308,198	64,474			20.9	2,436	2,568	132	5.2
St. L., A. & T. H., M. L. E.	191	191			807,904	595,258	292,646			50.1	4,065	3,068	1,537	50.1
St. L., A. & T. H., M. L. E.	71	71			465,586	319,308	74,272			32.8	5,084	4,038	1,040	29.8
St. Louis, Iron Mt. & So.	685	676	9	1.3	3,694,541	2,964,777	939,694			34.9	3,248	3,690	1,967	34.9
St. Louis & San Fran.	549	348	201	57.8	1,598,238	828,244	769,994			93.0	911	2,380	531	22.3
St. Paul & Sioux City	480	329	151	45.9	882,846	675,503	207,343			30.7	1,939	2,953	214	10.4
Scioto Valley	100	100			201,087	177,404	23,683			13.4	2,011	1,774	237	13.4
Toledo, Peoria & W.	237	237			800,171	780,391	119,780			15.3	3,798	3,293	505	15.3
Wab., St. L. & Pacific	1,583	1,219	364	29.9	7,564,260	5,131,806	2,432,457			47.2	4,778	4,210	568	13.5
Total, 48 roads	28,523	25,734	2,905	116	100,222,823	129,010,538	34,212,285			27.2	5,617	4,897	720	14.7
Total increase			2,789	10.8			34,212,285							



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EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN OPINIONS, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE PROMOTION OF EMPLOYÉS.

In the early part of the current year we published two articles on the subject of "Advancement," in which the subject was more especially treated in its relation to the conduct and general line of action of the employé. The object of those articles was to instill in the minds of the employés the necessity of deeply-seated principles of sterling honesty, to encourage them to a more conscientious performance of all duties pertaining to their respective stations, and to demonstrate how very essential careful study and thorough preparation are to the satisfactory and successful performance of the more responsible duties that may be required from them should they be promoted to a higher grade of the service.

In considering the subject from that stand-point, the position and responsibilities of the railroad company as employer was only referred to incidentally; not because the railroad company had no reciprocal interests and duties, but for the reason that an elaborate discussion of the obligations on the part of the railroads was not only unnecessary at that time, but might have diverted the attention of the reader from the subject more directly under consideration. And, acting upon that assumption, it is now proposed to consider the subject of advancement in connection with the duties and responsibilities of the management. Now the fact that to merit advancement necessitates on the part of the employé increased exertion and closer application to his duties and persistent devotion to the interests of his employer is conclusive evidence that there must be a corresponding obligation on the part of the employers, and that they are morally bound to show their appreciation of the increased value of the services rendered them by a judicious discrimination in the matter of promotion. To show how this may be done, and the manner in which it is often not done, this article is devoted.

As in general affairs wealth is only the portion of the few, and those in high places bear but a small

relative proportion to the masses that are subordinate to them, so in railroad life the number that can hold the few really good and fairly remunerative places is but a small percentage of the vast number engaged in the service. This being the case under the most liberal and equitable management, in any event all that are qualified cannot expect to obtain desirable positions that they may be perfectly competent to fill with credit to themselves and profit to their employers. This, however, is no reason why every railroad employé should not be stimulated by a laudable ambition to endeavor to secure as thorough an understanding of the practical workings of his particular department as possible, and to acquire as good a general knowledge of the details of operation of the other departments as he can; then, should opportunity occur for his advancement, he will find himself well qualified and in possession of the requisite knowledge successfully to acquit himself in any position in which he may be placed.

In considering the elements that contribute to what may be termed the present unsatisfactory condition of the railroad service, probably nothing can be mentioned that has exercised a more detrimental influence in regard to the securing a competent and efficient performance of duties than the general uncertainty of position that seems to pervade all branches of the service. In fact, it has almost become proverbial among the railroad employés that there is no species of labor where men are so uncertain of their position as the one in which they are engaged; and any policy that may be adopted by the railroad companies that will assist in destroying this view of the service cannot fail to be beneficial, both to the railroad company and to its employés, and would go a great way toward preventing the many entering the service who, under the present order of things, only enter it as a temporary "make-shift," to cover living expenses while they are waiting for an opportunity to obtain more congenial employment. While nothing can, probably, be devised that would admit of the promotion to a higher grade of all who might become qualified therefor, the service could undoubtedly be improved by the adoption of some system of discrimination by scaling wages in some degree on the principle of length of service, by which a certain premium could be allowed those who had been longest in the service of the company, and who were still performing faithfully the duties that might be required of them. Take, for instance, engineers and firemen, or conductors and trainmen; let them know that after they have been in the service of the company for five consecutive years they would receive a certain advance over those who had held the same position for a shorter time, and that when they had been in the service of the company for a term of ten consecutive years they would receive another advance, and they would not view their connection with that particular road as a matter of little importance—would find an object in the expected advance in wages upon the completion of the required term of service that would be a potent influence in securing their most faithful service. It is understood that this advance would not apply to men who were indolent, careless or inattentive to their duties; such men are undesirable and unprofitable at any figure, and the closer pruning of such men any railroad corps gets, the better it is for all interested.

Let the stations be graded in different classes, and any vacancy that may occur in an agency of a higher class be filled either by the transfer of an agent from a less desirable station of the same grade or from a station of the next lower grade. This would act as a stimulus to all agents to give the close attention to their present duties, as by no other course could they expect to be advanced. Ordinarily speaking, all new men should be required to enter the service in the lower ranks, and give evidence of their worthiness before they were promoted to more responsible and remunerative positions. By this means, the advancement of an employé would in a great measure depend upon his merit, and while we might have fewer striking illustrations of brilliant and rapid advancement, the general efficiency of the service would be elevated in no inconsiderable degree, and in the same ratio as the above system of promotion was carried out. According to common report, this principle is recognized by the Pennsylvania and a few of the other roads, and in every instance their service takes prominent rank for general efficiency.

A great injustice is frequently done to men highly worthy of better treatment by keeping them in a certain position year after year, for the reason that the details of the work devolving upon them are so intricate that they cannot be mastered easily, and there is a fear that the interests of the company may suffer in some way while another person is familiarizing himself with the manifold details. Thus it happens

that the honorable and satisfactory performance of the duties of their present position has an adverse influence on their chance of promotion, and the management, while admitting the value of their present service, passes them by under the subterfuge that they do not possess the necessary executive ability, have not the requisite tact or thorough knowledge of people or business required in the position to which promotion would be desirable, and the really deserving employé is kept in the same rut for years, and the evidence of the high appreciation in which he is held is demonstrated by the advancement of younger men over him. The consequence is such men become discouraged, and, to use an Irishism, "the heart is taken out of them," and, while they perform their routine duties in a perfunctory manner, they eagerly embrace the first opportunity to sever their connection with the company and engage in other pursuits. Unfortunately, this is likely to prove disastrous to them. Their close application to their railroad duties and long service have prevented them from acquiring any valuable knowledge of other business. It may be claimed that this is an exceptional case, but upon giving the matter a little thought almost any one can remember at least one case similar to the one just quoted.

Another thing that is apt to stir up bitter feelings against the management is when a vacancy occurs in a comparatively valuable position, and while several of the employés are exerting themselves to the utmost to secure the coveted prize, and even those that have no expectancy and possibly no desire to gain the appointment for themselves, are looking on with interest and closely watching to see who the fortunate appointee will be, a new man, who has had no previous connection with the road, steps in and secures the coveted prize. Such action on the part of railroad managements is not infrequent, and cannot help having a demoralizing influence on the entire service. It is immaterial how humble an employé's station may be, he will observe these things; and while he may be unable to reason according to any approved system of logic, he will be apt to quickly arrive at a direct conclusion, and will make a personal application of the principle involved. His conclusion will be that in the instance under consideration appointment went by favor, and meritorious service was considered as nothing; his personal application will be that the same rule will or may apply in his case, consequently there is no adequate incentive to cause him to use more than ordinary zeal in the performance of the duties of his position. What is the general sentiment that prevails at the present among railroad employés in relation to promotion? Is it that merit is a prime factor, or that continued faithful service receives due consideration? Should you be able to overhear a gathering of railroad men discussing the possible chances of the respective parties who aspire for the appointment to a desirable position, would you be as likely to hear any one advance the statement that Smith would get the position because he was the best qualified, or that Jones was sure of it for the reason that he was competent and entitled to the position by seniority of service, as you would that Brown stood a good chance for it, as his uncle was a director, unless Jenkins could get his brother-in-law (who is a State Senator) to work for him, though they both would have to look out for Adams, who is backed by high influence? The men may be altogether in wrong in their conclusions regarding the case that they are discussing, but the fact that they discuss it in the manner they do indicates that analogous cases are not infrequent. They are directly interested and observe closely, and their conclusions would undoubtedly be sustained by many parallel cases that have come under their personal observation.

It may be advanced that as the railroad company pay the current wages to the different grade of employés, it is in no manner responsible to the employés as to how appointments should be made; that the railroad is the property of the company, and it has a right to operate its own property in any manner it prefers; that the company is under no obligation to promote any employé, and as the company pays stipulated wages in the expectation of faithful service, it can justly expect the same without any consideration of future regard to the employé. In a certain sense this may be true, but admit that it is true in every particular, it must be remembered that the appointments (excepting it may be a few of the very highest ones) are not made by the real owners of the road, but by the directors and managers who are elected or appointed to manage the affairs of the owners as their representatives, and that the stockholders can justly expect their representatives to adopt the policy that will be the most conducive to the successful operation of the road. Upon this point, even if the matter is not viewed from the higher ground of there being recipro-

cal interests and duties between the railroad and its employes, but merely in connection with the promotion for efficiency of service, it is beyond question that a just and equitable, not to say liberal, policy in reference to the welfare and prosperity of its employes will be productive of a better and a more economical service, and will create a better feeling and greater harmony between the road and its servants, than the adoption of any policy that only treats the subject from the stand-point of the employer without regarding the interests of the employed in any way. The theory that generally speaking one man is as good as another, and that because men can be easily replaced upon the same terms as they are working, they are not entitled to any consideration when they think they have good cause for complaint, is not only erroneous but unjust, and any person that has the control of a large number of men and governs his actions by these ideas will soon or late find to his sorrow that he has been laboring under a grand mistake.

Owing to the magnitude and variety of the labor required in operating railroads of any considerable size, the service has of necessity to be divided in several departments, and the departments have to be subdivided in many parts to meet the requirements of a large traffic and a great number of employes, so that the details of all branches of the business can be under the supervision of competent officials. The consequence is that but comparatively few of the employes come under the personal observation of the managers-in-chief, but receive their instructions and are frequently hired and discharged by subordinate officials. Possibly this cannot be altogether avoided. As far as giving instructions is concerned, there may be no reason why it should be avoided, but the delegating to subordinate officers of the powers to engage or dismiss men should be made under considerable restrictions, if it be necessary that the authority should be granted them at all. For, if the employes think that they hold their places subject to the will of their immediate supervisors, or the head of their department, they will naturally think that it is more important to them to endeavor to retain the good will of those officers than to devote their energies toward the promotion of the interests of the company. Again, the possession by the subordinate officials of practically unlimited power as to the treatment of employes frequently causes the rapid advancement of sycophants who have given greater attention to the art of flattery of the official who has secured their positions for them than they have to the faithful performance of the duties of their position. They find that this is the most profitable, as has been proven to their satisfaction by their having secured promotion over the heads of those whose faithful services justly entitled them to advancement, but who have had more self-respect and too high a sense of honor to resort to fulsome flattery and degrading subserviency to attain their end. No mention need be made of direct or indirect bribery to secure promotion. While this may sometimes be practiced, it is doubtless more rare than many suppose. In the majority of instances, a discreet system of flattery is a far more potent instrument. Many a man who would indignantly spurn the slightest suggestion of a bribe, if approached at his weakest point would not be proof against flattery judiciously used. Men like to believe that they are regarded as exceptionally intelligent and competent in all things appertaining to their vocation, and are apt to consider that the recognition of their possessing this more than ordinary intelligence is strong evidence of the excellent qualifications and great discernment of the subordinate or person who recognizes their marked ability. Every man likes to hear agreeable things concerning himself, and is not given to inquiring too closely as to whether or not these assertions are the candid expressions of the honest belief of the persons making them.

In defense of the policy of permitting the heads of departments and the higher grade of sub-officials to select and dismiss employes that are under their control, it is often advanced that these officers are responsible for the successful transaction of all matters connected with the business of their departments or the branch of service under their supervision, and that they could not be expected to do this if impediments were placed in their way, by limiting their authority and not permitting them to have the selection and full control over the company's servants that are under them and for whose actions they are in a great measure responsible. To a certain extent this is true, but even the strongest advocate for unlimited power over subordinates will admit that the head of a department has not absolute control over the business of his department, but must be governed in his management of the same by the general policy that has been determined upon by the company through its board of directors; and why should not the same argument apply

in regard to the treatment of employes? It is stated that in some of the European countries no railroad official, however high his rank, has the power to hire any servant of the company, but that all applications for employment are presented with accompanying references to the board of directors, and are acted upon by them or by a committee that they may appoint, and that whenever it may be considered necessary to remove an employe for incapacity, negligence or any other cause, his superior has only power to suspend, but before the employe is dismissed a formal complaint must be made to the board of directors by the officer in charge, and the evidence bearing on the case must be presented by the complainant to sustain his charge, and the final decision in the matter is made by the board of directors. In those countries the directors are probably remunerated for their services, and, consequently, will devote their time to the investigation of details that it would be impossible to get the average American director to notice. But the principle involved holds good in any country, and, with some modification to meet the exigencies of American railroading, might be applied with advantage to the railroad management of this country. Let the general manager have the final decision as to whether an employe shall be dismissed or not, and let every employe, however humble his position may be, fully understand that before he will be dismissed from the service he will have a fair hearing and be given full opportunity to defend himself from any charge that may be presented against him. This will not injure the service, but, on the contrary, the employe will feel that the railroad company considers him worthy of some recognition, and he will be stimulated to expend greater energy in his labor than he would if the retention of his position rests upon no other security than the whim or notion of some minor officer of the road. We remember once hearing a conversation among some employes of one of the most prominent roads about the characteristics of their principal executive officer. They had all admitted that he was rather inclined to be self-willed and arbitrary, and had different views of economical management from what they had, and, as the saying is, "ruled with a rod of iron;" but they also stated that, considering the immense demand upon his time, he was easy to approach, and would take great pains to see that any just grievance of any employe should be promptly corrected, even if the aggrieved party was merely a section laborer, and the injustice was done by a departmental officer. And they acted and talked as if they considered that this one fact alone would have been sufficient to cover a multitude of shortcomings on the part of their superior had they existed, and that they could work with confidence in the permanency of their positions as long as they performed faithful service. During the labor riots of the summer of 1877, and while so many roads were suffering great pecuniary loss through the destruction of their property and interference with the freight and passenger traffic, and there seemed to be a general feeling of distrust between the majority of railroads and their employes, Mr. Vanderbilt is reported to have said, in substance, that he had no fear of any serious difficulty on the New York Central road; that the trainmen and other employes of his road were intelligent and faithful men, who fully understood that their interests were closely identified with the welfare of the road, and that while it had been necessary to make a reduction in the wages of the employes, by reason of the decreased revenue of the road, when the business of the road was such as to warrant it, the wages should be placed at the old figure. The result was, there was no trouble on the New York Central worth speaking of, and what little there was was not the work of its employes, but came from other quarters. The men felt that the railroad company had placed itself on record as admitting that its employes were worthy of its confidence and respect, and it caused an *esprit de corps* that has rendered the New York Central road absolutely free from any serious difficulty with its men. In treating this difficulty in the manner that he did, Mr. Vanderbilt not only acted with shrewdness and keen perception, but by the good faith in which he fulfilled his promises, he showed that his assertions were not merely made to tide over an emergency, but that he really believed that there was in some degree at least an identity of interest between the employer and the employed.

The preceding illustration is presented in support of the assertion that a frank acknowledgement on the part of a corporation of the mutual obligation existing between it and its servants does not have in any particular a demoralizing influence on the character of the service rendered it, but, on the contrary, has a tendency to create the existence of a harmonious feeling between the two that will result to the advantage

of both. History shows that the advancement in intelligence, prosperity and comfort of the laboring masses has not interfered with the just rights of the wealthy. While the condition of the laboring men of to-day is far better than was the condition of those that were in the same sphere of life a few centuries ago, a relative improvement has also been made in the condition and means of employment of the wealthy, and greater security has been given to property. Applying this to the question under consideration, it is safe to assume that no interest of the wealthy corporation will be sacrificed by any endeavor it may make to improve the condition of its servants.

In conclusion, the assertion is again made that without mutual confidence, forbearance and exertion, nothing can be effected in the way of creating a harmonious feeling between a railroad and its servants, and the initiatory step must be taken by the railroad companies. Let the railroad companies show that they have an interest in the welfare of their employes, that they consider every man who does his duty in a faithful manner worthy of respect and confidence, and demonstrate their appreciation of efficient service by a considerate treatment, and, as far as possible, by adopting the necessary precautions for the protection of the life and the promotion of the comfort of the employe. While it may not be practicable to advance every man that deserves it, let them show that promotion rests on merit and ability alone, and that the claims of old servants will not be overlooked by the giving of the desirable positions to outside men, unless there be some particular reason in that special case that would necessitate such action. The financial condition of the company may forbid the paying of high wages, but let the men understand that the present wages are justly based upon the present condition of business, and that with an increased business they can safely expect full wages, and any dissatisfaction that may have existed will be greatly lessened. When employes render faithful services, even if it is not possible to prove appreciation by pecuniary reward, words of commendation are not thrown away. Let any road adopt this policy in regard to its relations with its employes, and it will in time build up an efficient service; men will stay with it for a long term of years, and when it becomes necessary to bring in new men the reputation of the road for fair and liberal treatment of its servants will be such that almost any connection with it will be held to be desirable, and it will be able to make its selection from a large number of applicants. We see this in private enterprises. Let any concern establish a reputation for fair treatment of its employes, and that it retains its servants for a long term, promoting them in preference to strangers when opportunity occurs, and we see a concern that has the pick of the labor market. Why would it not be the same with the railroad companies? The experience of those roads which are especially considerate of their employes proves that it is.

AUGUST EARNINGS.

Our table of railroad earnings for August has reports from 51 railroads with 31,507 miles of road this year, or about 37 per cent. of the total now in operation in the United States. These roads, with 12½ per cent. more mileage than last year, earned 28.1 per cent. more money, and their average earnings per mile of road increased from \$658 to \$737, or 12 per cent. Of the 51 roads only two, the Cincinnati & Springfield and the Northern Pacific, have smaller total earnings (trifling in each case), but there are five others (the Atchison, Topeka & Santa Fe, the Chicago, Milwaukee & St. Paul, the Denver, South Park & Pacific, the Kansas City, Lawrence & Southern, and the St. Paul & Sioux City) that have smaller earnings per mile of road this year, each of these five having a larger mileage in operation. The increase in mileage worked is so very large (3,950 miles and 15 per cent.) that the comparison of total earnings is of comparatively little value as indicative of the progress of the roads without taking into account this increase in mileage, and in the case of several companies it is altogether misleading. The Atchison, Topeka & Santa Fe, for instance, shows an increase of more than 30 per cent. in total earnings, but this is made with an increase of nearly 41 per cent. in the mileage; so the Chicago, Milwaukee & St. Paul's increase of 35 per cent. in earnings is made by 42½ per cent. more road; the Denver, South Park & Pacific had 83½ per cent. more road with which to earn 41½ per cent. more money; the Louisville & Nashville 54 per cent. more road to make 79¼ per cent. more earnings; the Pittsburgh, Titusville & Buffalo 36 per cent. more road and 48 per cent. more earnings; the St. Louis & San Francisco 32 per cent. more road and 47 per cent. more earnings; the St. Paul, Minneapolis & Manitoba 17½ per cent. more road and 23½ more

earnings; the St. Paul & Sioux City 54½ more road and 21 per cent. more earnings; the Wabash, St. Louis & Pacific 36 per cent. more road and 45 per cent. more earnings. Several of the companies have an additional mileage this year equivalent to a long railroad—the Chicago, Milwaukee & St. Paul 929 miles, the Louisville & Nashville 595, the Wabash 444, the Atchison, Topeka & Santa Fe 401, Chicago & Northwestern 285, and five others between one and two hundred miles.

But, after allowing for the effect of these additions, several of the roads show enormous increases in earnings. The increase of 306 per cent. in earnings, without increase of mileage, on the Memphis & Charleston must be credited to the fact that the traffic of the road was almost destroyed by the yellow fever in August last year, so that with this great increase they are still very light this year, only seven of the whole number of 51 roads having smaller earnings per mile. Very different is the gain on the Denver & Rio Grande. Its gain of 51.3 per cent. in mileage is accompanied by an increase of 328.6 per cent. in earnings, and the increase in its earnings per mile is 183.6 per cent., bringing them up to the handsome figure of \$777, and making it rank twelfth in the list of 51 roads this year, while with \$274 per mile it stood fortieth in the same list last year. What we may call its mate, the Denver, South Park & Pacific, has larger earnings per mile than the Rio Grande road, but less than last year, when with a little more than half the length of road it commanded nearly the whole of the Leadville traffic, which it now divides with the Rio Grande road. In comparison with July of this year it is noticeable that the South Park road shows a decrease of about one-ninth, while the Rio Grande has a small (5 per cent.) increase.

Other notable increases in earnings per mile are 65.8 on the Alabama Great Southern (still with very light earnings), 50.8 on the Cairo & St. Louis, 38 on the Flint & Pere Marquette, 50.4 on the Hannibal & St. Joseph, 51.9 on the Lake Erie & Western, 47.7 on the Marquette, Houghton & Ontonagon (which thus shows the effect of the revival of the iron industry), 45.9 on the Memphis, Paducah & Northern (which still has smaller earnings per mile than any other road of the 51), 43.3 on the Northern Central, 36.9 on the main line and 36.1 on the Belleville Line of the St. Louis, Alton & Terre Haute, and 31.8 on the Iron Mountain.

The increase of 12 per cent. in earnings per mile over August of last year is a large one, but August was not so favorable a month as some others last year. The average earnings per mile of 31 roads reported in our table then showed a decrease of 5 per cent. compared with August, 1878, when the grain movement, by the way, was the heaviest ever known. But comparing with previous months of this year, the percentage of increase is not unfavorable. The percentages of increase in earnings per mile in 1880 over 1879 have been for the several months:

January.....	16.0 per cent.	May.....	10.4 per cent.
February.....	12.5 "	June.....	16.7 "
March.....	19.0 "	July.....	9.7 "
April.....	14.3 "	August.....	12.0 "

Thus the increase was less in July and May and greater in the other months than in August.

Last year a beginning was made of restoring east-bound through rates in August, but this did not have much effect until September, and not then entirely, there being some outstanding contracts. But taking into consideration the irregularities this year, which also affected a portion of the September traffic, the average September rates on this traffic have been just about the same this year as last. It must be remembered, however, that a very large number of the railroads reporting either have none of this traffic, or it is too small a proportion of their total traffic to have much effect on their earnings.

There are eight roads in the list, a considerable proportion of whose traffic consists of through freight carried at trunk-line rates, and whose mileage is substantially the same as last year. Most of these have much more than the average increase in earnings per mile of road, these being 22.7 per cent. against 10.6 per cent. for the average of the other roads, notwithstanding the fact that all but one of the many increases of over 40 per cent. are on these other roads. These eight roads have but one-sixth of the total mileage and substantially no increase in mileage (5,171 against 5,162), but they have 29 per cent. of the increase in earnings. They are all east of the Mississippi, and all in old and well-settled states which have not recently had any great growth of population. We point out these facts to show that the increase in earnings is not due chiefly to the development of new country in the far West. This has been of very great advantage to a certain number of roads, it is true, and has had a beneficial effect on trunk-line traffic also, but does not by any means account for the great general improvement.

About 5,600 miles of the road reporting is west of the Missouri, and more than a quarter of the increase in mileage is there. These roads, however, with the exception of the Denver & Rio Grande, do not show any great increase in earnings per mile, and three out of eight of them have a decrease in such earnings—caused, however, by additions of new road.

The roads in the Southwestern Association that report show great gains over last year, when they were engaged in a war of rates that was not closed until the middle of September. A very large share of the total traffic of the Hannibal & St. Joseph especially consists of the business of "Missouri River points" then contended for, and it is probable that a very large part of its enormous increase of 50.4 per cent. is due to the better rates received this year on that traffic. Last year its August earnings were smaller than ever before since the war.

Below we give the earnings per mile of road in August of as many roads as have reported them, for the past seven years, viz.:

	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Atch., T. & S. F.	\$221	\$269	\$356	\$348	\$594	\$527	\$487
Burl., C. R. & N.	264	281	212	275	241	283	325
Cairo & St. Louis.	203	166	180	119	143	180	271
Central Pacific	970	1,117	1,175	725	821	664	760
Chicago & Alton	739	634	780	725	831	695	882
Chic. & East Ill.	.....	.....	.....	420	542	473	509
Chic., Mil. & St. P.	504	450	407	479	357	336	319
Chic. & N. W.	607	598	544	605	605	579	688
Cleve., Col., Cin., & Ind.	1,071	783	859	908	926	979	1,110
Cleve. Mt. V. & Del.	.....	219	210	216	219	187	196
Den. & Rio Grande	.....	273	216	284	358	274	777
Flint & P. M.	336	.....	.....	.....	.....	316	436
Han. & St. Jo.	701	517	579	622	733	485	729
Ill. Cen. in Ill.	811	655	935	764	701	579	630
Ill. Cen. in Iowa	348	339	275	317	250	207	328
Ind., Bloom. & W.	419	311	402	268	586	507	551
Int. & Gt. North.	.....	173	188	225	224	233	274
Louisville & Nash.	424	388	450	482	441	401	408
Mem., Pad. & Nor.	.....	150	137	156	139	101	148
Mo., Kan. & Tex.	368	344	374	411	375	389	446
Mobile & Ohio	224	214	224	239	227	210	269
Nash., Chat. & St. L.	.....	405	384	445	372	407	486
Northern Central	1,301	1,493	1,102	1,139	963	971	1,392
Ok. & L. Cham.	.....	.....	.....	.....	.....	.....	.....
Plain	.....	.....	.....	518	417	444	450
Paducah & Eliz.	.....	.....	.....	119	158	148	185
Pennsylvania	2,066	1,982	1,972	1,563	1,694	1,593	1,980
Phila. & Reading	1,471	2,078	1,390	1,562	1,523	1,579	1,735
St. L., A. & T. H.	.....	.....	.....	.....	.....	.....	.....
Belleville Line	705	570	404	655	623	616	839
St. L., Iron Mt. & So.	.....	415	401	547	500	589	793
St. L. & San Fran.	.....	.....	350	377	398	404	452
Scioto Valley	.....	.....	.....	.....	291	292	324
Texas & Pacific	436	321	420	530	373	416	476
T., P. & W.	383	477	606	512	553	431	537

Here we have the August earnings per mile of 32 roads for the last three years, of 31 for the last four years, of 28 for five years, of 27 for six years, and of 22 for seven years. The earnings this year were larger on 30 out of 32 roads than in 1879; on 25 out of 32 than in 1878; on 23 out of 31 than in 1877; on 23 out of 28 than in 1876; on 18 out of 27 than in 1875; and on 17 out of 23 the earnings per mile were larger this year than in August, 1874. This year thus compares favorably with any of the others, though it will be seen that several of the older and more important roads did as well or better in 1874 or 1875 than in 1880, as the Central Pacific, Illinois Central, the Northern Central, the Pennsylvania and the Reading. The proportion of expenses is considerably smaller now, however, and moreover the dollar is worth more.

Of the 32 roads reporting for three to seven years in the above list, there are 17 whose earnings per mile this August were larger than in any previous August reported, while 15 have at some time or other had larger August earnings.

For the eight months ending with August our table has reports from 48 railroads with an aggregate of 28,523 miles of road this year, which is 10.8 per cent. more than they worked last year. With this mileage they earned \$160,222,823 this year, which is 27.2 per cent. more than they earned during the corresponding eight months of last year, their average earnings per mile of road increasing from \$4,897 to \$5,617, or 14.7 per cent. Not one of the 48 roads shows any decrease in total earnings, and only three have a decrease in earnings per mile, and these (the Chicago, Milwaukee & St. Paul, the Pittsburgh, Titusville & Buffalo, and the St. Paul & Sioux City) have large additions of new road with much lighter traffic than that of the old road. The increase in earnings per mile is more than 50 per cent. on four roads, more than 40 per cent. on seven, 30 per cent. or more on fifteen, and more than 20 per cent. on 27 roads out of the 48. The largest rate of increase is 95.2 per cent., on the Denver, South Park & Pacific, which has earned \$9,177 per mile in the eight months, an amount exceeded only on the New York Central, the Pennsylvania, the Reading, and the Northern Central, and more than twice as much as the earnings of the Illinois lines of the Illinois Central—certainly a remarkable showing for a road only two years old. At the other extreme are three roads that have earned less than \$1,400 per mile, and which last year all earned less than \$1,000—the Memphis, Paducah & Northern, the Paducah & Elizabeth-

town, and the Alabama Great Southern. The heaviest earnings per mile (New York Central's) were more than eighteen times as much as the lightest (Memphis, Paducah & Northern's).

The two Canada roads are in this table, each with more than the average increase of earnings, but the Grand Trunk's increase of 31 per cent. in earnings per mile is partly due to a decrease in mileage, by the transfer of the profitless Rivière du Loup line to the Intercolonial. Of other roads carrying trunk-line through traffic largely, the Cleveland, Columbus, Cincinnati & Indianapolis gains 25.2 per cent., the Great Western 18.1, the New York Central 20.8, the Northern Central 26, the Pennsylvania 25.6, and the St. Louis, Alton & Terre Haute main line 50.1 per cent.—all much above the average of the 48 roads.

There is no New England road in this list, unless we count the Grand Trunk, which crosses Maine, a New England road. The Middle States are represented by only six roads, but two of these are great trunk lines, and a third the leading anthracite carrier, and their aggregate mileage is 15¼ per cent., and their aggregate earnings nearly 40 per cent. of the whole, so that these states after all are better represented probably than any other part of the country. No less than 10,557 miles, or 33½ per cent. of the whole, is west of the Mississippi, and about 3,500 miles of it is west of the Missouri. But a much greater mileage of trans-Missouri roads reports for August than for the eight months, including the Atchison, Topeka & Santa Fe and the Denver & Rio Grande, and the lack of these and the Union Pacific and the Burlington & Missouri River make the report for the country between the Missouri and the Rocky Mountains very imperfect; for of the 3,500 miles of road given as "trans-Missouri," two-thirds is west of the Rockies, and belongs properly to the Pacific coast. The number of southern roads reporting is somewhat unusual. Eight, with 3,713 miles of road, or 13 per cent. of the whole, are south of the Ohio and east of the Mississippi, showing increases much larger than the average; the two roads to Texas also have much greater increases than the average (35 and 47 per cent.). The only Texas road that reports has a small increase.

So far the roads northwest of Chicago have had scarcely any of this year's spring wheat crop to carry. The movement of this crop began in September, and as there is much more of it than last year a heavier movement and larger earnings from it might be expected; but as the price is lower and the demand more sluggish this year, the movement is less active than it would otherwise have been. The Chicago & Northwestern, the Chicago, Milwaukee & St. Paul, the St. Paul & Sioux City, the Chicago, St. Paul, Minneapolis & Omaha, the St. Paul, Minneapolis & Manitoba, and the Northern Pacific will reflect this movement chiefly. So far all these roads are making their larger earnings in the face of the bad wheat crop of last year.

The roads that drain the southern parts of Ohio, Indiana and Illinois have had an enormous traffic from the winter wheat in August this year, but they also had last year, so that their increase may not be credited to that to any considerable extent.

For the rest of the year the comparison will be made with a period last year when traffic was very heavy and business generally prosperous. There is not now any prospect that the movement of the leading staples, such as grain, provisions, anthracite coal and lumber, will be much greater this than last fall; but there is more general activity in manufacturing industries, and incomes have been so satisfactory for a year that there is much more traveling, and from these more than from an increase in the great staples of production increased earnings are to be expected for the rest of this year.

FAST PASSENGER LOCOMOTIVES.

It has been said of human progress that it moves in a circle. Some shrewd observer has corrected this by saying that it advances in a spiral; that is, its path, looked at in one way, is in a circle, but at each revolution it moves upward or forward in relation to the position it occupied before. Any observer of the advance which has been made in railroads will notice that it has very much of this spiral movement. Thus twenty-five years ago there was a great demand for faster speeds on what were then the principal railroads in the country. Time-tables were then made which required very nearly as high rates of speed as any of the present day. The cars of that time were, however, very light compared with those in use now. Sleeping cars were used only to a limited extent, and drawing-room cars were unknown. The financial collapse of 1857 so crippled the railroads and the general business of the country that the fast trains were then abandoned, and it is only within the past few years that the demands of the

public and the competition of different lines has led to the adoption of speeds equal to or greater than those of the date referred to.

Besides the fact that the weight and number of cars of each train have been increased since then very greatly, the tracks of most main line roads have been wonderfully improved since the war. Continuous brakes have also been generally introduced, which removes one very important element of danger of running fast.

It will be seen, then, that in the quarter of a century which has just passed, while from one point of view we occupy the same position we did then, yet the advance which has been made by our progressive spiral is that we now have better tracks to run on than we had then, and more efficient means of arresting the speed of trains. On the other hand, the latter are much heavier, and consequently much more difficult to draw.

There can be no doubt that locomotive superintendents have of late found a good deal of difficulty in providing engines which would make the time required of them. A retrospective view of the methods adopted in the construction of locomotives to make fast time, with some examination into the elements of the problem as it now presents itself, will probably be of interest to many of our readers.

The way in which people reason about this subject is as follows: They will take an ordinary American locomotive, with 4½ ft. driving-wheels and 17 × 24 in. cylinders, which will take a train weighing 800 tons over a given road at a speed of 30 miles per hour with ease. They then assume that if the wheels were doubled in size, the cylinders remaining the same and making the same number of strokes, the engine would run twice as fast, but would have only half the tractive power. If the cylinders can exert only half the tractive force on the periphery of the large wheels, the inference is that only half as much adhesion is required, and therefore only a single pair of driving-wheels is provided for such fast engines. This process of reasoning seems to be perfectly unassailable, and on it as a basis a great many engines with a single pair of large driving-wheels from 6 feet to 9 feet in diameter have been built in this country and in Europe. Here such engines have, however, universally failed, and at the present time none of that kind are in use on this side of the Atlantic that we know of, and in Europe they are no longer regarded with much favor, although many of them are still used.

We may naturally then ask what is the cause of their failure. Perhaps the answer may become apparent if we examine into the work which an engine running a fast train must do. If the latter consists of a dozen or fifteen cars, as it often does, which are standing still, the engine must of course put them in motion. Their resistance or the strain on the draw-bar will then depend upon the quickness with which they are started. Thus if the power employed to move them was exerted by means of a screw and was applied very slowly and regularly, very little more force need be exerted to start them than is required to keep them in motion after they are started. Suppose on the other hand that a cannon were placed on the track behind the train, and that a 15 in. shot were fired so as to strike the buffer; obviously the resistance of the train to moving as rapidly as the shot would be so great that the materials of which the cars were made could not resist it, and they would be shattered to pieces. Now between these two degrees of resistance the latter varies, and a locomotive may always exert its maximum tractive power in starting a train, even though the latter is comparatively light.

Nor is this all. After the train is started, if fast time is demanded, its resistance will depend upon the rate of acceleration. If—in the language of trainmen—"you get up speed quickly," the resistance or pull in the draw-bar will be correspondingly great. It therefore happens that in starting a train and in getting up speed an engine will nearly always have occasion to exert its maximum tractive power. If it has a single pair of wheels, it will have comparatively little adhesion, and as the tractive force which it can exert is dependent upon the adhesion, the start and acceleration of speed must be comparatively slow with that kind of engine, and therefore it becomes difficult to make fast time, for the lack of adhesion.

The condition under which an engine must work, when it has only a single pair of driving-wheels and therefore comparatively little adhesion, is analogous to that which would be experienced in drawing a wagon rapidly with a weak string. In such a case, obviously, it would be necessary to start very gently and increase the speed slowly, for fear of breaking the string. If a locomotive has little adhesion it must

also be started gently; otherwise it will lose its hold to the track.

It may therefore be concluded that a deficiency of adhesion is a defect with all engines having a single pair of driving-wheels, even when there is an appliance for increasing and diminishing the load on them. This latter device has been tried repeatedly, but thus far unsuccessfully.

To get over the defect of insufficient adhesion, it might naturally be expected that resort would be had to coupled wheels, and to get the required speed these might be increased proportionately. There are, however, very grave objections to the use of large wheels. In the first place, their weight is somewhat in proportion to the square of their diameters. They require larger axles, larger cylinders, pistons, connecting-rods and frames, and in short, the whole working machinery of the engine must be larger and heavier. To show what the effect of this will be, let it be supposed that the weight of an engine must be limited to 35 tons, or 70,000 lbs. It is obvious that the weight of its boiler cannot exceed the whole weight less that of the working and other parts which form the locomotive. In other words, the larger and heavier the wheels, axles, cylinders, frames, connecting rods, etc. are, the lighter and smaller must be the boiler. What is added to the weight of these parts must be taken away from the boiler, so that an engine of a given weight, with big wheels and cylinders, cannot have so large a boiler as one with small wheels.

Besides this the centre of gravity, if large wheels are used, must be thrown up higher, and the engine is consequently more unsteady than it would be if it were lower. The distance apart of large driving-wheels is also governed to some extent by their size. When this is excessive, it involves long coupling-rods with a consequent increased liability to breakage.

Now, if instead of increasing the speed by enlarging the diameter of the driving-wheels, the same object is attained by increasing the number of strokes of the piston and revolutions of the wheels, none of the evils pointed out will be encountered. As has been pointed out in these columns before, there is never any difficulty in turning the wheels fast enough to run at any desired speed. The trouble is in the movement of the reciprocating parts. The speed of the pistons limits the number of their strokes. If their stroke is diminished, the speed is reduced in the same proportion, and the same relative cylinder capacity may be retained by increasing their diameter. There is no reason why the latter may not be equal to or even exceed the stroke, and in fact in marine engines it often does. A shorter stroke than is ordinarily used also has the advantage that it reduces the relative amount of surface exposed to radiation, although an increase of the diameter of the piston adds to its weight.

Let us sum up then: To increase the diameters of driving-wheels the size of boilers must be diminished, and the centre of gravity of the engine be raised up, and in some cases the coupling-rods must be lengthened. Increasing the size of the wheels and other parts adds to the cost of the engine, and diminishing the boiler makes it less economical of fuel.

On the other hand, to reduce the stroke and increase the number of strokes diminishes the surface of the cylinders, lessens their cost slightly, keeps the centre of gravity of the engine low, and in some classes of engines makes it possible to shorten the coupling-rods, and diminishes the amount of overhanging weight.

Let some of our locomotive superintendents who are called upon to provide engines to run fast and heavy trains adopt 5-ft. wheels, and cylinders 18 × 18 in. with an efficient valve-gear, and the largest boiler admissible, and it is believed that the working of such engines would be more satisfactory than that of one with larger wheels and longer-stroke cylinders. An 18 × 18 in. cylinder has slightly more capacity than an 17 × 24 in. The contents of the spaces swept through by the pistons is 5,581 and 5,448 square inches respectively.

Provision Exports.

Provision exports for the eight months ending with August have been to the value of \$92,375,046 this year, against \$72,246,601 last year, showing an increase of more than \$20,000,000, or 27.7 per cent. These exports both years are in value a little more than half the value of the grain and flour exports for the same time, namely, \$181,856,766 and \$137,914,047, in which the increase was nearly \$44,000,000, or 31.9 per cent.

The exports of fresh beef continue to grow, though the live stock exports are now much more important. For the eight months the exports of fresh beef were 32,005 tons this year, against 20,600 last year. These are small figures compared with the 274,073 tons of bacon, the 134,674 tons of lard, or even the 46,248 tons of cheese exported during the same period, and when we consider the vastly greater consumption of beef than of

cheese, or even bacon where beef is anywhere near it in price, it indicates what an enormous increase of the fresh beef and live cattle export business is possible with perfected ocean transportation. Of the total provision export values fresh beef formed but 6.1 per cent. this year and 4.9 per cent. last year.

The exports for the eight months of each of the articles included under the head of "provisions" by the Bureau of Statistics were as follows, in tons of 2,000 lbs.:

	1880.	1879.	Inc. or Dec.	P. c.
Fresh beef.....	32,005	20,600	I.	11,405 55.4
Salted beef.....	15,462	12,465	I.	2,997 23.3
Tallow.....	43,802	33,600	I.	10,202 30.4
Butter.....	12,131	12,794	D.	663 5.2
Cheese.....	46,248	49,105	D.	2,857 5.8
Total cattle products.....	149,648	128,564	I.	21,084 16.4
Bacon and hams.....	274,073	267,487	I.	6,586 2.5
Lard.....	134,674	120,347	I.	14,327 11.9
Pork.....	30,490	29,523	I.	967 2.6
Total hog products.....	439,046	417,357	I.	21,687 5.2
Total.....	588,694	545,921	I.	42,773 7.8

Thus the great increase of 27.7 per cent. in the values of the exports is altogether out of proportion to the comparatively moderate increase of 7.8 per cent. in the quantity. This of course is due to the higher prices prevailing this year, and it will be well to remember that in 1879 the prices of hog products were unusually low, and also of butter and cheese. The average values reported by the Bureau of Statistics are about 19½ cents a pound for butter this year, against 14 last, 10 cents for cheese, against 7½ cents last, 7.1 cents for bacon, against 6.6, 7½ for lard, against 6½ cents. Fresh beef, on the other hand, was a little lower this year, and salt beef about the same price. It is encouraging to see the considerable increase in the exports of bacon and lard in spite of the higher prices, and in spite of the comparatively high price of bread, which is likely to have a much greater effect on the European consumption than half a cent a pound in the price of meat. And it is still more encouraging to see that the decrease in butter and cheese exports has been less than 6 per cent. in the face of an increase of 40 per cent. or more in their prices.

And this leads us to say that the lower cost of bread in Europe since the last harvest is likely to lead to a still greater demand for these "provisions," of all kinds, and especially for bacon and lard, the poor man's luxuries. Whether an increased demand will be followed by an increased supply at once, however, or simply by higher prices, is a question. The "meat crop" is not so quickly increased as the grain crop; for the farmers have to wait to raise the animals. But we may see in this one recompense that the farmers (and carriers) are likely some time to get for low prices of grain. It will result soon or late in a greater consumption of meat. This, though it affords the railroads a less amount of freight than the grain which would require equal acreage for its production, gives them better rates, and moreover gives a traffic which is not diverted to any extent by lake, river or canal transportation. The railroads have it pretty much to themselves at rates that can always be made high enough to yield a profit without preventing the movement of the freight, which sometimes is not the case with grain.

Motors for the Broadway Underground Railroad.

Referring to our article on this road, published two weeks ago, the *Scientific News* says: "We find his [our] conservatism apparently getting the upper hand of judgment in that part of his remarks relating to ventilation, in which he apparently adopts the view that the only way to propel trains available for the proposed railway is the ordinary steam locomotive, or some modification of it. Starting with this assumption, the problem of ventilation becomes indeed formidable."

In speaking of a substitute for ordinary steam locomotives this journal suggests electric locomotives, but adds "they are yet an experiment." "Pneumatic locomotives" it says "give promise of more success, but this system has not yet sufficiently demonstrated its value to warrant its adoption by a prudent management of a railway." If these fail he suggests the use of "an endless cable with friction clutch." Considering the fact that the latter plan failed most lamentably on the Ninth Avenue Elevated Railroad, in its early days, and of the other proposed substitutes "the value of the one is not yet sufficiently demonstrated," and the other "is still an experiment," it is hard to say what a "prudent management of a railway" could well do but fall back on ordinary steam locomotives. If in this event "the problem of ventilation is indeed formidable," it seems as though the project of the underground road was in a bad way. The *Scientific News* professes "faith in the pneumatic locomotive for tunnel work," which may not be misplaced, but if the Underground Railway Company should issue a call for subscriptions to its stock, premising it with a statement somewhat as follows: "The use of steam locomotives is impracticable, but electric engines may be used, although these are yet an experiment." Should these fail the management do not feel warranted in adopting pneumatic locomotives because "their value is not yet sufficiently demonstrated." If other things fail the company can, however, use the endless cable system which was tried and failed on the elevated railroad—with such a prospectus, how much stock would be taken? If the company shares the faith expressed by the *Scientific News* in the pneumatic locomotive, and if the use of steam locomotives is impracticable, it would seem as though the chief work of the Underground Railway Company, for some time at least, should be the perfection of the former kind of engine.

The ventilation of an underground railroad, if steam locomotives are used, may not be impracticable, but it will be

very difficult and expensive; and, as we said before, it does not seem as though the company realized the difficulties in the way of doing it.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Chicago, Milwaukee & St. Paul.—The Iowa & Dakota Division is extended from Mitchell, Dak., west 10 miles.

Brattleboro & White Hall.—The first track is laid from Brattleboro, Vt., northwest to Newfane, 14 miles. Gauge, 3 feet.

Chester & Lenoir.—Extended from Dallas, N. C., north to the Catawba River, $3\frac{1}{2}$ miles. Gauge, 3 feet.

Pleasantville & Ocean City.—Completed from Pleasantville, N. J., south by west to Somers Point, $7\frac{1}{2}$ miles. Gauge, $3\frac{1}{2}$ feet.

Louisville & Nashville.—On the extension of the *Pensacola & Selma* Line track is laid from Junction, Ala., north 5 miles. Gauge, 5 feet.

Chicago & Northwestern.—The *Chicago & Dakota* Line is extended west to a point twenty miles from Ft. Pierre, Dak., an extension of 28 miles.

This is a total of 68 miles of new railroad, making 3,607 miles thus far this year, against 2,214 miles reported at the same time in 1879, 1,287 miles in 1878, 1,396 miles in 1877, 1,677 miles in 1876, 804 miles in 1875, 1,101 miles in 1874, 2,778 miles in 1873, and 4,970 miles in 1872.

CAUSES THAT PREVENT GROWTH IN PASSENGER TRAFFIC are discussed in another column by a correspondent whose experience qualifies him to judge. All of the reasons he mentions seem to us good and valid, with the exception of that which affirms the concentration of property in few hands to be a cause. It is true that there are now numerous great fortunes, but there are also, we believe, a great many more small and moderate ones than there used to be. Very likely the concentration of trade in large establishments has reduced travel, by reducing the number of those who have to travel on business; but the revolution in the methods of trading has done very much more to that end. Formerly retailers almost always bought their stocks personally at the great markets; even a small country store-keeper in the West would go to New York to lay in his stock. Now most goods are ordered by letter or telegraph, and the merchant very rarely goes to a distant city to buy in person. There is a good deal of such travel still, it is true, but it is nothing like that proportion of the whole that it used to be, as those who remember the crowds of merchants that thronged the conveyances and hotels in the fall and spring thirty or forty years ago will agree.

It is true that the passenger department does an enormous amount of work for which it gets no credit in the report of passenger earnings. It is very often very convenient for a railroad to pay in services for various things that it wants, and it is customary to give away services for all sorts of reasons or for no reason at all. Now when this is done, the payment is always made in the services of the passenger department, which is charged with the cost, but not credited with the gain, if there is one, which very commonly accrues to the freight department, as when freight shipments are secured by giving free tickets or passes.

If the shops of the railroad had to pay debts of the company by making furniture, etc., they would be credited with the cost at least of the articles bartered; if they did not, and the cost should be included with that of the railroad work proper, the master mechanic would think it hard if complaint should be made at the high cost of the cars, etc., he turned out. It would be interesting to see an account of mileage of passes and free tickets, or of their value at regular rates, on some of our railroads for a year, and if the department on account of which they were given should be stated, it would be still more interesting and useful.

NEW YORK IMMIGRANT TRAFFIC, which this year has been enormous in amount, and, in spite of low rates, might have been a source of large profits, because of its being carried in great train-loads, has been rendered comparatively unprofitable by reason of the competition of the different roads. The authorities at Castle Garden long ago made an arrangement by which the immigrants getting tickets there should be equally divided between the Pennsylvania, the Erie and the New York Central roads. Last winter, however, the Erie made a contract with the North German Lloyd and, we believe, some other steamship lines, by which their passengers were to be ticketed through from Europe via the Erie to their destinations in the West, and for a considerable time this road had by far the larger part of the traffic. Of course this resulted in a reduction of rates on the other roads, and for two or three months the immigrant traffic has been in a very demoralized condition, and in spite of its bulk has probably brought little profit to any of the competing railroads. And the immigrants did not get the whole benefit of the reductions, by any means, for the companies paid large commissions to almost every one who had access to the immigrants, notably to Castle Garden missionaries and immigrant boarding-houses.

An arrangement has now been made among the railroad companies for dividing the traffic, including that which the Erie had secured by its special contracts with steamer lines. The immigrants by the North German Lloyd will go one week to the Erie and the next to the Central, and the arrivals will generally be divided according to the lines by which they arrive, the Inman passengers going by the Erie, the State Line passengers by the Central, the National and Red

Star arrivals by the Pennsylvania, etc., the business being "evened" by the immigrants ticketed from Castle Garden, and other methods agreed upon.

THE TENNESSEE RAILROADS that were built before the war were mostly aided by the state, for which aid they gave their bonds, which were made payable in the bonds of the state. After the war, the state bonds being greatly depreciated, the railroad companies exercised their option of paying off their debts to the state in its bonds. A few years ago the claim was set up that the railroad companies were guarantors of the state bonds to the amount of the bonds which had been issued by them to the state; and an opinion of the eminent lawyer, Charles O'Connor, being given in favor of the validity of this claim, it had a marked effect on the prices of Tennessee railroad securities. Suits were brought to enforce this claim, and in one against the East Tennessee, Virginia & Georgia Company arguments were heard before United States District Judge Withey at Nashville last spring, and last Monday his decision was announced. He holds that the claim is invalid, and that the company's payment of its own debt to the state of Tennessee in a manner provided by law relieves it of all obligation in connection with the state debt.

WATER RATES have fluctuated as follows during the week ending with Wednesday: Lake rates were a quarter of a cent lower than the previous week from Thursday to Saturday, that is, $3\frac{1}{2}$ cents a bushel for corn and 4 for wheat from Chicago and Milwaukee to Buffalo—about the lowest rates of the year. Monday they advanced half a cent and Wednesday another quarter of a cent, closing then at $4\frac{1}{4}$ cents for corn and $4\frac{3}{4}$ for wheat—an advance of nearly 25 per cent. within the week. Canal rates were 5¢ on wheat and 5½¢ on corn at the close of the previous week, and for corn they remained unchanged, but an advance of $\frac{1}{4}$ to ½ was had on wheat, and Wednesday rates closed unsettled at 5½¢ for corn and 6 cents a bushel for wheat from Buffalo to New York. Ocean rates have remained about the same, $5\frac{1}{2}$ d. to $5\frac{3}{4}$ d. being the prevailing rates on grain by steam from New York to Liverpool.

THE STANDARD OIL COMPANY, it is reported, is now engaged in securing the right of way for a pipe line from New York harbor to its pipe lines in the oil regions, and a definite account is given of its location across New Jersey. It has long seemed that this would be inevitable; this company's interest in oil transportation is so great that it needs to command the cheapest methods, and it will doubtless be able to give full employment to its pipe line with its own oil. The effect will probably be the increase of refining at the sea-board, and thus a decrease in refined (carried in barrels) as well as in the crude oil (carried in tank cars) that now goes by rail.

PLANS FOR AN IMPROVED CATTLE CAR will be received by the American Humane Association until the 1st of January, instead of the 1st of October, as has been announced. Competitors who wish further information may address the President of the Association, Mr. Edwin Lee Brown, corner of Clinton and Jackson streets, Chicago.

THE CHICAGO-OMAHA RAILROADS have recently reduced their fares to about three cents a mile on such parts of their lines where the rates have been higher heretofore. This brings down the fare from Chicago to Kansas City and Council Bluffs to \$14.80. Within Illinois, heretofore, their rates have been a little higher—about $3\frac{1}{2}$ cents a mile.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:
Western Maryland, annual meeting, at Hillen Station, in Baltimore, Oct. 20, at noon.
Raleigh & Augusta Air Line, annual meeting, at the office in Raleigh, N. C., Oct. 7, at noon.
Raleigh & Gaston, annual meeting, at the office in Raleigh, N. C., Oct. 7, at 11 a. m.

Dividends.

Dividends have been declared as follows:
Chicago, Milwaukee & St. Paul, $3\frac{1}{2}$ per cent., semi-annual, on the preferred stock, and $3\frac{1}{4}$ per cent. on the common stock, payable Oct. 15.
Dulaware, Lackawanna & Western, 1½ per cent., payable Oct. 25. This is the first dividend since July, 1876.
Raleigh & Gaston, 3 per cent., semi-annual, payable Oct. 1.
Dubuque & Sioux City (leased to Illinois Central), 3 per cent., payable Oct. 15.
Chicago, Rock Island & Pacific, 1½ per cent., quarterly, payable Nov. 1. Transfer books will close Oct. 5.
Pittsburgh, Ft. Wayne & Chicago, 1½ per cent., quarterly, payable Oct. 1 on special stock, and Oct. 5 on regular stock.

Pittsburgh, Fort Wayne & Chicago Mutual Benefit Association.

This association held its seventh annual convention in Pittsburgh, Sept. 21. The membership, as shown by the annual reports, beginning with 65 in 1875, has been, in successive years since, 568, 421, 313, 409, and this year 325. The last report is for only eleven months, during which 17 death claims were paid, two of the deaths being by railroad accidents. The total paid since the organization of the association has been \$69,747.50, of which about \$25,000 was paid last year.

ELECTIONS AND APPOINTMENTS.

Baltimore & Ohio.—Mr. G. M. Serpell, Master of Road of the Pittsburgh Division, has been appointed Master of Transportation also. Mr. Serpell was formerly Resident Engineer on the Louisville & Nashville Railroad. In 1868, during its construction, he entered the service of the old Pittsburgh & Connellsville, now the Pittsburgh Division of the Baltimore & Ohio Road, as Assistant Engineer, under the late Benj. H.

Latrobe, and after its completion to Cumberland, was appointed Engineer and Master of Road. While still retaining this position, he now assumes the management of the Transportation Department.

Brotherhood of Locomotive Firemen.—The annual convention in Chicago elected officers for the ensuing year as follows: Grand Master, Frank W. Arnold, Columbus, O.; Vice-Grand Master, Charles Pope, Toronto, Ont.; Grand Secretary and Treasurer, Eugene V. Debs, Terre Haute, Ind.; Grand Instructor, Samuel M. Stevens, Terre Haute, Ind.; Grand Warden, Charles Vogelsang, Los Angeles, Cal.; Grand Conductor, John Clark, Memphis, Tenn.; Grand Inner Guard, Charles Zepp, Indianapolis; Grand Outer Guard, Wm. Tibbets, Salem, Mass.; Grand Chaplain, John Brewer, LaFayette, Ind.; Editor of Magazine, Eugene V. Debs, Terre Haute, Ind.; Associate Editor, Wm. F. Hynes, Denver, Col.; Grand Trustees, Wm. Maroney, Chicago, Wm. F. Hynes, Denver, Col., and J. E. Briggs, Waterloo, Ia. The Grievance Committee appointed is as follows: D. M. Wells, Urbana, Ill.; J. T. Little, Rawlins, Wyo. Ter.; Lewis Ebertson, Philadelphia; Angus Menish, Stratford, Ont.; Robert Ebbage, Terre Haute, Ind.; D. L. Stephens, Washington; J. W. Richardson, Louisville, Ky.; Wm. Pembroke, Salem, Mass.; John I. Steele, Atchison, Kan.; Emory Green, West Oakland, Cal.; W. M. Palmer, Amboy, Ill.; Thomas Shivers, Atlanta, Ga.; Wm. J. Armitage, Denver, Col.; Daniel Field, San Francisco.

Chicago, Milwaukee & St. Paul.—Mr. Frederick Underwood, formerly a conductor on the road, has been appointed Assistant Superintendent of the River Division with office in Minneapolis.

Chicago, Texas & Mexican Central.—The directors of this new company are: A. F. Hardie, T. L. Marsalis, A. Sanger, J. B. Simpson, T. A. Wilmans, Dallas, Tex.; Clinton B. Hale, D. H. Hale, D. K. Tripp, Chicago; L. H. Fitzhugh, Washington. The board has elected Daniel H. Hale, President; Dwight K. Tripp, Vice-President; Asahel T. Bennett, Secretary; T. A. Wilmans, Assistant Secretary; Clinton B. Hale, Treasurer; George W. Waite, Chief Engineer. Office in Dallas, Texas.

Cleveland, Mt. Vernon & Delaware.—Gen. G. A. Jones, of Mt. Vernon, O., has been appointed Receiver in the foreclosure suit recently begun.

Des Moines & Kansas City.—The directors of this company are: P. M. Cassidy, R. L. Tidnick, George Lendrum, W. M. Jones, J. W. Mills, George Whitaker, T. E. Brown. The officers are: W. M. Jones, President; George Lendrum, Vice President; Charles J. Jones, Secretary.

Ft. Wayne, Muncie & Cincinnati.—Mr. W. B. Beamer has been appointed Master of Transportation for this road and the Whitewater Railroad, which are now substantially under one management. Mr. C. D. Elliott has been appointed Train Dispatcher for both roads. The offices are in Connersville, Ind.

Greencastle, El River & Vincennes.—This company was recently organized by the election of the following directors: Robert Smith, C. J. Wilkinson, John J. Huffman, Poland, Ind.; J. M. Nees, Brazil, Ind.; J. T. Smith, Bowling Green, Ind.; M. B. Thompson, P. D. Smith, H. M. Russell, David Schooley, Urbana, Ill.; J. M. Smith, Clinton, Ill.; Jay G. Rupert, Decatur, Ill. The board elected M. B. Thompson, President; Robert Smith, Vice-President; J. M. Smith, Secretary; John J. Huffman, Treasurer.

Long Valley Coal Co.—The officers of this company are: President, Edward Lewis; Treasurer, Harvey Shaw; Superintendent, James Macfarlane; Engineer, C. A. Canfield; Paymaster, E. O. Macfarlane. The chief office is in Philadelphia.

Marquette, Houghton & Ontonagon.—At the annual meeting recently the following directors were chosen: Richard S. Fay, E. L. Higginson, George Higginson, H. G. Higginson, James J. Higginson, Quincy A. Saw, George L. Sisley, Samuel Sloan, Jesse Spaulding, J. S. Stackpole, Mosby, Mo.

Marshalltown, Waterloo & Milwaukee.—The directors of this new company are: A. C. Abbott, George Glick, J. M. Parker, A. F. Thurston, Marshalltown, Ia.; L. Alford, E. Johnson, A. T. Lusch, W. W. Miller, M. Parrott, Waterloo, Ia.; S. B. Zeigler, West Union, Ia.; J. S. Clarkson, Des Moines, Iowa.

Master Car-Painters' Association.—The recent convention re-elected as President D. D. Robertson, Detroit, Mich.; Vice-President, J. H. Wills, Morrisania, N. Y.; Secretary and Treasurer, R. McKeon, Kent, Ohio.

Memphis, Holly Springs & Selma.—Major J. J. Busby, of Memphis, Tenn., is President of this company.

Missouri, Arkansas & Southern.—The directors of this new company are: B. R. Davidson, J. H. Van Hoose, A. M. Wilson, Fayetteville, Ark.; J. Holcomb, Springdale, Ark.; George A. Purdy, Pierce City, Mo.; John O. Day, Springfield, Mo.; C. W. Rogers, St. Louis.

Northern Pacific.—At the annual meeting in New York, Sept. 29, the following directors were chosen: Frederick Billings, Johnston Livingston, Hugh McCulloch, Robert Harris, A. H. Barney, W. R. Garrison, C. B. Wright, Joseph Dilworth, H. E. Johnson, J. D. Potts, Alexander Mitchell, B. P. Cheney and J. B. Williams. Messrs. Barney, Garrison and Johnson are new members, succeeding J. Fraley Smith, J. N. Denison and J. C. Ainsworth. The board re-elected Frederick Billings President.

Ohio Central.—The following circular has been issued: "Mr. J. B. Morgan has been appointed Master Mechanic for this company, with headquarters at Bucyrus, O. All matters pertaining to this department should be addressed to him at that place."

Pittsburgh Local.—The officers of this new company are: President, Wm. Vankirk; Directors, R. B. Brown, H. H. Byram, DeWitt C. Carroll, W. C. Erskine, W. J. Gilmore, J. D. Long, J. H. McCreery, John G. Robinson, H. H. Woods; Secretary and Treasurer, John G. Robinson.

Schuykill & Lehigh.—Mr. Eldridge Dale has been appointed Superintendent, with office in Reading, Pa.

Selma, Rome & Dalton.—Major John F. O'Brien will, for the present, act as General Manager, in addition to his duties as General Superintendent of the East Tennessee, Virginia & Georgia road.

Wabash, St. Louis & Pacific.—Mr. Wm. F. Merrill has been appointed General Superintendent of the Missouri, Iowa & Nebraska Railroad, now operated by this company under lease. Mr. Merrill is Superintendent and Chief Engineer of the Toledo, Peoria & Warsaw, also controlled by this company.

Wagner Sleeping & Palace Car Co.—Mr. Alfred White has been appointed General Manager (a new office), with headquarters in Chicago. Mr. White was formerly Assistant General Manager of the Detroit & Milwaukee, and is an experienced railroad man.

Wilmington & Weldon.—Mr. T. M. Emerson is appointed Assistant General Freight and Ticket Agent.

Wilmington, Columbia & Augusta.—Mr. T. M. Emerson has been appointed Assistant General Freight and Ticket Agent.

PERSONAL.

—Mr. Reuben Andrews, for 25 years Master Mechanic of the Petersburg Railroad, died at his residence in Petersburg, Va., Sept. 22.

—Mr. W. C. Baker, formerly of the firm of Baker & Smith, has been chosen Superintendent of the United States Heating & Power Company.

—Major R. W. Shenk, a banker and prominent citizen of Lancaster, Pa., and President of the Lancaster & Reading Railroad Company, died Sept. 26, aged 45 years.

—Mr. Thomas Allen, President of the St. Louis, Iron Mountain & Southern Company, has been nominated for Congress by the Democrats of the Second Missouri District.

—Mr. George Robertson, formerly Secretary and Treasurer of the Memphis & Charleston Company, died Sept. 16, at Eureka Springs, Ark., where he had gone for his health.

—Hon. Calvin Goddard Child, a distinguished Connecticut lawyer, and Counsel for the New York, New Haven & Hartford Company, died at his residence in Stamford, Conn., Sept. 28, aged 46 years.

—The New Hampshire Democratic Convention has nominated for Railroad Commissioners Nathaniel Wiggins, of Greenland, and John D. Emery, of Manchester, leaving the third candidate to be named by the State Committee.

—Mr. George W. Lyman, well known as one of the founders of cotton manufacturing in New England, died of old age at his home in Waltham, Mass., Sept. 24, in the 94th year of his age. He was one of the first directors of the Boston & Lowell Railroad Company.

—Mr. J. D. McIlwain has resigned his office as foreman of the Car Department of the Jeffersonville, Madison & Indianapolis road, to accept a position as Assistant Superintendent of the Missouri Car & Foundry Company's works in St. Louis. The change takes place Oct. 15.

—Mr. Dudley P. Phelps, Treasurer of the Onondaga County Savings Bank, in Syracuse, N. Y., died Sept. 25, aged 64 years. For a number of years he was Ticket Agent of the old Syracuse & Utica road, and about 1852 he was for a time Manager of the Michigan Southern road.

—Maj. R. H. Nilton, for several years Secretary to President Blackstone, and before that Paymaster of the Chicago & Alton Railroad, and still earlier an officer of the companies which the Chicago & Alton leased, will resign to go to California, to live on a fine fruit farm which he and his brother-in-law, Mr. Bardon, have bought in the Fresno Valley, some 200 miles south of San Francisco. Mr. W. J. Bryson is to take Major Nilton's place.

—Mr. Abraham R. Day, who died last week in Hackettstown, N. J., aged 68 years, was a civil engineer, and in 1851 surveyed and afterward superintended the construction of the extension of the Morris & Essex Railroad from Dover to Hackettstown. In 1854 he was appointed General Freight Agent of the same road and held that position until 1863, when he was appointed Resident Engineer and took charge of the extension from Hackettstown to Phillipsburg. When the road was leased to the Delaware, Lackawanna & Western, he resigned; he afterward built the road from Tocol to St. Augustine in Florida, had charge of the drainage of the Pequest meadows in New Jersey, and of some minor engineering works.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Eight months ending Aug. 31:				
	1880.	1879.	Inc. or Dec.	P. c.
Detroit, Lansing & Northern.....	\$809,592	\$718,829	I.	\$90,763 12.6
Northern Central.....	3,120,012	2,475,961	I.	644,351 26.0
Net earnings.....	973,195	579,033	I.	394,162 68.1
Pennsylvania.....	26,606,074	21,179,085	I.	5,427,389 25.6
Net earnings.....	10,951,396	8,102,470	I.	2,848,926 35.2
Seven months ending July 31:				
Houston & Tex.....	\$1,460,833	\$1,202,674	I.	\$258,159 21.5
Net earnings.....	520,728	387,494	I.	142,235 36.7
Six months ending June 30:				
Grand Rapids & Ind.....	\$783,644	\$583,737	I.	\$200,007 24.3
Net earnings.....	202,019	152,025	I.	49,994 32.9
Month of July:				
Houston & Tex.....	\$227,679	\$186,848	I.	\$40,831 21.9
Month of August:				
Cin. & West.....	\$69,592	\$51,811	I.	\$17,781 34.0
Det., Lansing & Northern.....	102,025	109,036	D.	6,411 5.9
Pennsylvania.....	3,723,355	2,982,718	I.	740,637 24.8
Net earnings.....	1,554,482	1,257,000	I.	297,482 23.7
Third week in September:				
Chi. & East Ill.....	\$33,294	\$21,717	I.	\$11,547 52.4
Denver & Rio G.....	91,352	25,922	I.	65,430 252.6
St. L., I. M. & S.....	184,300	166,504	I.	17,796 10.6
Week ending Sept. 10:				
Great Western.....	\$105,452	\$91,390	I.	\$14,062 15.4
Week ending Sept. 18:				
Grand Trunk.....	\$231,886	\$197,244	I.	\$34,642 17.5

Grain Movement.

For the week ending Sept. 18, receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

Northwestern Shipments.				
Year.	Northwestern Receipts.	Total.	By rail.	P. c.
1873.....	5,303,884	5,262,374	1,463,922	27.8
1874.....	4,206,222	2,563,893	351,198	13.7
1875.....	3,512,700	3,689,452	1,378,492	37.5
1876.....	4,360,091	4,089,315	1,820,301	44.5
1877.....	6,965,480	5,040,528	1,082,128	21.5
1878.....	5,851,401	4,852,847	994,118	20.5
1879.....	6,573,503	6,107,358	1,299,302	21.3
1880.....	7,194,477	4,928,506	1,914,336	39.0

Compared with the corresponding week last year, Northwestern receipts are 9 per cent. greater, Northwestern total shipments 19 per cent. less, Northwestern rail shipments 47 per cent. greater, and Atlantic receipts 29 per cent. less.

Compared with previous weeks of this year there is a great gain in the receipts of Northwestern markets since the preceding week (30 per cent.), and a gain of 8 per cent. over the week ending Sept. 4; but in each of the six weeks ending Aug. 28 the receipts were larger. The shipments of these markets were 4 per cent. less than the week before, but much smaller than in any other week since the middle of July and the smallest since the middle of May. The rail shipments are about as large, however, as when total ship-

ments were heaviest, and a larger proportion of the whole than in any other week since April. The receipts at Atlantic ports are nearly 30 per cent. less than the week before, and are the smallest since the third week in May.

Of the Northwestern receipts Chicago had 53.8 per cent., Toledo 12.4, St. Louis 11.3, Peoria 8.3, Milwaukee 5.5, Detroit 3.3, Duluth 3.3, and Cleveland 2.1 per cent. Duluth begins to make a better figure in the reports and the improvement at Milwaukee continues.

Of the Atlantic receipts, New York had 48.3 per cent., Baltimore 12.7, Philadelphia 12.4, New Orleans 10.9, Boston 7.7, Montreal 7.2, and Portland 0.8 per cent. The receipts at New Orleans continue large for the season; those of Baltimore and Philadelphia—especially those of Baltimore—are not only much smaller but a much smaller proportion of the whole than last year.

The exports of flour and grain from the seven Atlantic ports for four successive weeks have been:

	Week ending			
	Sept. 22.	Sept. 15.	Sept. 8.	Sept. 1.
Flour, bbls.....	97,970	77,582	84,113	88,149
Grain, bush.....	5,114,389	5,348,537	6,234,512	6,743,355

The last two weeks show a notable decrease in the amount exported.

Montreal receipts and exports of grain of all kinds, including flour reduced to wheat, are reported as follows for the period from Jan. 1 to Sept. 15 for four years:

	1880.	1879.	1878.	1877.
Receipts.....	16,398,008	13,801,276	14,276,259	9,730,110
Exports.....	17,920,708	12,861,792	13,163,136	6,962,052

Since last year the increase is 18.8 per cent. in receipts and 39 per cent. in exports. The movement of corn, nearly all of which must be from the United States, is notable, amounting this year to 37 per cent. of the receipts and 33 per cent. of the exports.

Chicago Live Hog Traffic.

Receipts and shipments of live hogs at Chicago for the eight months ending with August have been:

	1880.	1879.	1878.
Receipts.....	4,263,370	3,705,528	3,909,908
Shipments.....	1,002,891	1,194,963	915,633

The receipts are 15 per cent. more this year than last and 6.6 per cent. more than in 1878, the shipments are 16 per cent. less than in 1879 and 9½ per cent. more than in 1878. The decrease in shipments is due to the increase in packing at Chicago. From March 1 to Sept. 15 it packed 850,000, or 56 per cent., more hogs this year than last. The summer packing now approximates the winter packing, and the largest live hog receipts of the year so far at Chicago were in June, and in the six months since the winter packing season the receipts have been 63½ per cent. of the total receipts of the eight months in 1878, 83 per cent. in 1879 and 73½ per cent. in 1880.

Coal Movement.

Coal tonnages for the week ending Sept. 18 are reported as follows:

	1880.	1879.	Inc. or Dec.	P. c.
Anthracite.....	647,093	577,545	I.	69,548 12.0
Semi-bituminous.....	100,345	45,805	I.	54,540 119.1
Bituminous, Penna.....	37,107	39,574	D.	2,467 6.2
Coke, Pennsylvania.....	34,268	24,908	I.	9,360 37.6

For the corresponding week in 1879 Cumberland production was stopped by a miners' strike.

The anthracite companies have decided not to make any changes in the prices of coal for October. The market is reported dull and there are rumors of sales below the list prices. A stoppage for the first six days in October has been agreed on.

Chicago coal receipts for the eight months ending Aug. 31 are reported as follows by the *Coal Trade Journal*:

	By rail.		By lake.	
	1880.	1879.	1880.	1879.
Anthracite.....	222,466	222,586	203,753	235,479
Bituminous.....	1,034,839	783,733	167,832	184,708
Total.....	1,257,305	1,006,319	434,585	450,187

Total anthracite receipts were 489,219 tons, an increase of only 0.24 per cent. over the previous year. Total bituminous shipments were 1,202,671 tons, an increase of 24.2 per cent. over 1879.

August shipments of coal over the Seattle & Walla Walla road and by sea from Seattle, Wash. Ter., were 13,267 tons. For the eight months shipments were: 1880, 86,928; 1879, 86,908, being substantially the same both years.

The official accountant's statement of anthracite coal tonnage for August and the eight months, differing somewhat in form from the weekly statements, is as follows:

	August.		Eight months.	
	1880.	1879.	1880.	1879.
Phila. & Reading.....	470,222	677,075	3,494,882	4,774,550
Lehigh Valley.....	368,929	346,572	2,619,546	2,758,494
Central of New Jersey.....	277,027	329,341	2,020,051	2,414,487
Delaware, Lacka. & Western.....	280,247	359,477	2,118,728	2,408,342
Del. & Hudson Canal Co.....	183,578	272,307	1,608,838	1,914,643
Pennsylvania R. R. Co.....	204,937	161,821	1,100,022	1,089,824
Pennsylvania Coal Co.....	81,465	131,987	631,009	950,269
N. Y. Lake Erie & Western.....	29,107	52,822	251,354	312,674
Total.....	1,895,512	2,331,402	13,844,430	16,623,283

Decrease for the month, 435,890 tons, or 18.7 per cent.; decrease for the eight months, 2,778,853 tons, or 16.7 per cent. For the month the Lehigh Valley and the Pennsylvania Railroad companies show an increase, each of the other companies a decrease; for the eight months the Pennsylvania Railroad alone shows an increase.

The stock of anthracite coal reported on hand at tide-water shipping points on Aug. 31 was 619,899 tons, against 756,081 tons on July 31, a decrease of 136,182 tons, or 18 per cent. during the month.

Arizona Rates.

General Freight Agent Stubbs, of the Central and Southern Pacific railroads, has issued the following circular regarding Arizona rates:

"Hereafter rates on Arizona business should be made by adding to the rates in force from Omaha, Kansas City and points east of Missouri River to Sacramento, Cal., the following arbitraries:

"For Gila Bend, or Mariposa—First, second, third and fourth classes, \$2 per 100 pounds; Classes A, B, C and D, \$1.50.

"For Casa Grande—First, second, third and fourth classes, \$2.20; Classes A, B, C and D, \$1.70.

"For Tucson—First, second, third and fourth classes, \$2.70; Classes A, B, C and D, \$2.85.

"For Pantano—First, second, third and fourth classes, \$2.85; Classes A, B, C and D, \$2.35.

"For Benson—First, second, third and fourth classes, \$2.95; Classes A, B, C and D, \$2.45.

"For Wilcox—First, second, third and fourth classes, \$3.10; Classes A, B, C and D, \$2.60.

"For San Simon (present terminus)—First, second, third and fourth classes, \$3.20; Classes A, B, C and D, \$2.70.

"Eastern agents using California rates and divisions will way-bill freight for Arizona at divisions of Sacramento rates, and note through rates and divisions on way-bills."

The Provision Traffic.

The general freight agents of the six Eastern pool-lines from Chicago have issued the following joint order to agents of their respective roads and lines:

"In receiving meat, etc., at the Stock-Yards and all packing-houses, you will obtain the net weight of boxed meats and add thereto 30 per cent. and issue your receipts for the gross weight, and never for the net weight. This order is imperative, covering transactions at all packing-houses. Lard must be receipted for at actual gross weight. This you can obtain from packing-houses, as their invoices show both net and gross weight. Pork hams in tiers will be rated at 440 lbs. per tier; if pickle is drawn, actual gross weight must be obtained. To arrive at actual weight, weigh five tiers and strike an average. Barrel pork will be rated at 320 lbs. per barrel; all other hog product must be at actual gross weight. Beef hams in barrels will be rated at 330 lbs. per barrel, and the same in tiers at actual gross weight. India mess and regular mess beef must be receipted for at actual weight."

Georgia Railroad Commission Rates.

After hearing elaborate arguments on both sides, the Georgia Railroad Commission has refused a petition from the Brunswick & Albany road for permission to increase its rates on cotton from Albany. The Commission held that the present rates—36 cents per 100 lbs. for 167 miles—were sufficient.

Southwestern Railway Association—Rates on Railroad Iron.

The following notice was issued by General Commissioner Midgley, under date of Sept. 21: "On and after date the following rates will apply on shipments of railroad iron, in car lots, originating at Atlantic seaboard points, when destined to Kansas City, Leavenworth, Atchison or St. Joseph: From Toledo, \$5.79 per gross ton; from Chicago, \$4.00; from East St. Louis, \$2.43; from Hannibal, etc., \$2.33 per gross ton.

Flour Trade from Minneapolis.

The St. Paul *Pioneer-Press* of Sept. 23 says: "The contest over the flour-carrying trade of Minneapolis, which lately threatened, has been averted by a new arrangement, by which each railroad company gets an equivalent in flour to haul away from the amount of wheat it brings into the city. Formerly, the St. Paul & Duluth got 40 per cent. of the flour to haul, the remaining 60 per cent. being divided between the other roads. Last year the river took a big slice out of this 60 per cent., and this year a still bigger. Then the St. Paul & Sioux City, which carried a large proportion of the wheat brought to Minneapolis, but took out scarcely any flour, was consolidated with the Chicago, St. Paul & Minneapolis, and the new company demanded a share of the flour shipments. The Minneapolis & St. Louis, after leasing track privileges over the St. Paul & Duluth, took the flour formerly carried by the latter company, well as the proportion that formerly went east via the main line. All these changes disturbed the arrangement heretofore existing and complicated the problem of dividing the traffic. The question has, however, been finally settled on the basis noted above. Each road carrying wheat to Minneapolis issues through bills therefor, and after delivering the wheat receives a corresponding amount of flour to haul as far east as its line of road extends. This arrangement disposes of complaints of the millers that wheat shippers received comparatively lower rates on the grain sent to the city, than the former did on the flour. Of course, as the St. Paul, Minneapolis & Manitoba Company has no line to the east, the transportation of the amount of flour made from the wheat brought into Minneapolis over its road calls for the application of the principles of 'addition, division and silence.'"

Petroleum.

Stowell's *Petroleum Reporter* gives the production of the Pennsylvania oil-wells for August as follows, in barrels of 42 gallons:

	1880.	1879.	Inc. or Dec.	P. c.
Production.....	2,157,228	1,869,652	I.	288,176 15.4
Shipments.....	1,231,611	1,808,239	D.	576,628 31.9
Stock on hand Aug. 31.....	14,413,944	7,390,943	I.	7,022,600 95.0
No. of producing wells.....	13,500	11,585	I.	1,915 16.5

The pipe-line reports for the month show receipts of 2,194,363 barrels; deliveries of 1,390,480 barrels, leaving stock on hand 14,413,944 barrels.

Pittsburgh receipts of crude oil for the month were 143,442 barrels; 15,466 barrels by Allegheny Valley road, and 127,976 by pipe line.

Southern Traffic Settlement.

The Cincinnati *Commercial* of Sept. 25 says: "The Louisville & Nashville road has opened to the Cincinnati Southern Railway the Montgomery territory and all points in the South for both freight and passenger business, upon fair and equitable terms. The tickets for the Southern road will be placed on sale in all the offices of the Louisville & Nashville road, at all the points indicated, and the tickets of the latter road will be sold in the office of the Southern. In short, the companies agree in fixing low, uniform rates on both freight and passengers, thereby securing the public transportation to any point they may desire, and to the owners of the roads a fair return for the capital invested. The details of the arrangement are not yet made known, but the facts given are official, and indicate that the war between the two great corporations is over—for the present."

THE SCRAP HEAP.

Railroad Equipment Notes.

The Brooks Locomotive Works, at Dunkirk, N. Y., are very busy, employing over 550 men and turning out eight locomotives a month.

The Taunton Locomotive Works, in Taunton, Mass., have lately built 13 engines for the Chicago, St. Paul, Minneapolis & Omaha road. They have a contract for several engines for the Mexican Central road.

Fleming & Sons, at St. John, N. B., have completed the first mogul engine of their order for the Intercolonial road, and have a second nearly ready.

Willard's Sons & Bell, in Chicago, have now six heavy steam-hammers running, chiefly on car axles, with large orders ahead.

The Pittsburgh Locomotive Works have an order for 10 consolidation engines for the Atchison, Topeka & Santa Fe road.

The remaining building of the Oxford Co-operative Car Works, in Oxford, Pa., was burned down Sept. 18. These works were built in 1873, but the company failed not long afterward, and work was discontinued. The paint shop was blown down in a gale Oct. 23, 1878, and the building just burned, which was of brick, 70 by 300 ft., was sold at

sheriff's sale and the machinery was taken out a few weeks since. The experiment was a promising one at first, but it was started at a bad time, and quarrels and dishonesty among the managers helped to break it down.

The Danforth Locomotive Works, at Paterson, N. J., is shipping some engines to Union Pacific road.

The Baldwin Locomotive Works, in Philadelphia, are now loading up 12 engines to go to Australia.

The Lebanon Manufacturing Co., at Lebanon, Pa., are building 100 box cars for the Philadelphia & Erie road.

Steps are being taken to establish railroad car works in Montreal. It is understood that a large concern in the United States will hold the controlling interest and will build extensive shops, provided a reasonable amount in local subscriptions is secured.

The car shops of Osgood Bradley, at Worcester, Mass., are building a number of stock cars for the Fitchburg Railroad.

W. C. Baker's heating apparatus has been adopted by the Manhattan Elevated Railway Company, and will be applied to all the cars in use on the elevated railroads in New York.

The Ohio Falls Car Co., at Jeffersonville, Ind., has just delivered four new passenger cars to the St. Louis & San Francisco road. They are very handsomely finished and are fitted with the Miller platform and coupler and the Westinghouse automatic brake.

The Wason Car & Foundry Co., at Chattanooga, Tenn., has a large order for freight cars for the Cincinnati Southern road.

The Erie Car Works, at Erie, Pa., have an order for freight cars for the Cincinnati Southern.

Iron and Manufacturing Notes.

A company has been organized to build a charcoal blast furnace at Florence, Marinette County, Mich. The stockholders are all connected with the Menominee Iron Company.

The Pennsylvania & Virginia Iron & Coal Co. has put in blast its new Ferrol Furnace in Augusta County, Va. The company's furnace at Quinnimont, W. Va., is running steadily.

The Rippetoe Iron estate in Augusta County, Va., has been sold to parties from Youngstown, O., and Pittsburgh, who intend to build a large blast furnace on the property.

The James River Steel Works, near Lynchburg, Va., are rolling iron for the Virginia Midland's new bridge over the James at Lynchburg.

The Reading Eagle furnishes the following concerning the furnaces of Berks County, Pa.: "Anthracite furnaces in blast: Reading Iron Works, one furnace; Keystone Furnace Co., one furnace; Eckert Bros., two Henry Clay furnaces—700 tons; E. & G. Brooke Iron Co., Birdsboro, two furnaces—375 tons; Temple Iron Co., two furnaces—340 tons; Monocacy Iron Co.—150 tons; Theodore Garretson's two furnaces at Lyons—200 tons; Wm. M. Kauffman & Co.'s Topton and Kutztown furnaces—320 tons; Leibbrandt & McDowell's Moslem Furnace—100 tons. Total anthracite iron per week, 2,085 tons. Five anthracite furnaces are at present out of blast. Two of these are located at Reading, one at Robesonia, one at Leesport and one at Birdsboro. Charcoal furnaces in blast: Sally Ann Furnace, near Bowers Station, belonging to the Rockland Iron Co.; Oley Furnace, near Friedensburg, Clymer Iron Co.; Maiden Creek Furnace, near Lenhartsville, Spang, Erb & Co.; Union Furnace, near Hamburg, D. B. Fisher; Mt. Penn Furnace, Cumtup township, Wm. M. Kauffman & Co.; Joanna Furnace, at Joatina, on line of Wilmington & Northern Railroad, Heber Smith; Hampton Furnace, Birdsboro, E. & G. Brooke Iron Co. The charcoal furnaces make on an average about 82 tons per week, making a total production of 224 tons."

Wm. Sellers & Co., of Philadelphia, are shipping nine turntables to Australia.

Volcano Furnace, at Massillon, O., which has been idle for over three years past, has recently gone into blast and is running steadily.

Atkins Bros., at Pottsville, Pa., have recently put their No. 1 furnace in blast, making two stacks now at work.

The furnace at Red Bridge, R. I., will, it is said, soon be put in blast.

The Receiver of the Dauphin Furnace Co., of Pottsville, Pa., will soon blow out the furnace, by an order of the Court.

The Shenango Iron Works, in New Castle, Pa., started up the puddle mill lately, and the rest of the works will soon be in operation.

Wampum Furnace, in Lawrence County, Pa., is now in blast, after a rest of three years.

The North Chicago Rolling Mill Co. has taken a contract for steel rails for the Peoria, Decatur & Evansville road.

The Lehigh Iron & Coal Co. is making extensive improvements at its furnaces in Scranton, Pa.

A large shipment of iron rails and fastenings from Cardiff, Wales, recently arrived at Galveston, Tex., for the Corpus Christi, San Diego & Rio Grande road.

Prices of Scrap Iron. The Pittsburgh market for scrap iron is reported steady, with light stocks and prices well maintained. Quotations are No. 1 (Railroad) wrought scrap, \$28 to \$30, net; old car springs and axles (steel), \$36 to \$38, net; old scrap metal, \$20 to \$21; wrought turnings, \$19 to \$21; old car wheels, \$32 to \$35, gross, and cast borings, \$14 to \$15 per ton.

In Philadelphia prices reported are \$20 to \$21 for cast, and \$27 to \$29 for wrought scrap.

Prices of Rails. A very large business is reported in steel rails, and orders amounting to nearly 80,000 tons are said to have been placed for 1881 delivery, in addition to the large sales heretofore mentioned. Philadelphia quotations are \$59 to \$62.50 per ton at mill, but as high as \$65 is said to have been paid for small lots for immediate delivery. New York quotations are \$60 to \$65 according to section, etc.

In iron rails there has been much inquiry, but not many actual sales. The market is somewhat unsettled; quotations in Philadelphia are \$46 to \$47 per ton at mill for 56 lbs. section, and \$47.50 to \$52 for light rails. In New York quotations are \$47 to \$50. Some large transactions in foreign rails are reported pending, with one sale of 5,000 tons, 56 lbs., at \$46 delivered at a Southern port.

Old iron rails are somewhat dull and unsettled. Philadelphia reports quote \$26 to \$27; New York about the same.

Pittsburgh quotations for railroad spikes are \$2.65 to \$2.75 per 100 lbs.; track-bolts, \$3 to \$3.50 for square nuts, and \$3.75 to \$4 for hexagon; fish-plates, \$2.65 to \$2.75 per 100 lbs., all 30 days' time.

The American-Russian Coal, Iron and Railroad Project.

We noted some months ago the departure of a number of American capitalists, manufacturers and engineers to investigate a project for developing the anthracite coal regions of Southern Russia. The party has now returned and Mr. Wharton Barker, the projector of the enterprise, says:

"We carried out our programme as originally intended in every respect, except that when we reached London we were requested to proceed directly to St. Petersburg before going to the south of Russia. We did so, and while there we became fully possessed of the views of the government in the matter. In Southern Russia the Donetz coal basin and the

deposits of iron ores in the neighborhood of Krivol Rog were found to be fully equal to the expectations formed of them. As to the railroad, it was apparent when on the ground that the proposition to construct and operate it as an isolated line ought not to be entertained. We, therefore, presented a counter-proposition involving the control of the existing government railways in that section, so as to be able to operate the new line in connection and in harmony with them. Such an important modification, of course, requires proper time for consideration by the government; but, with this change as to the railroad, I believe that the opinion was universal that the possibilities of the undertaking have been rather under-estimated than over-estimated. I can say nothing more than that the whole subject, with full reports upon every branch of it, will be submitted to the gentlemen interested."

Portable Railroads for Turkestan.

The Russian government, having decided to make use of a portable railroad in its military operations in Turkestan, sent a commission some time since to examine into and report upon various systems employed in England, France and Germany, and this commission recommended the adoption of the Decauville system. In accordance with this suggestion a preliminary order has been given to Messrs. Decauville, at Petit Bourg, for about 60 miles of line, of 0.50-meter gauge, with 500 vehicles especially designed for the transport of provisions, liquids and men, and two engines weighing two tons each. The rails, which weigh 14½ lbs. per yard, are of steel, and of the ordinary section adopted for the Decauville system. This contract, although quite an extensive one, will be filled in two months after the date of order.

OLD AND NEW ROADS.

Alabama Great Southern.—Mr. Shipp, a special commissioner sent out by the English company which owns this road, has just arrived in this country for the purpose of making a thorough inspection of the property. It is understood that he is also instructed to examine and report as to the expediency of building the New Orleans & Northeastern road, the proposed extension of this road from Meridian to New Orleans, for which charters were granted in Louisiana and Mississippi 10 or 12 years ago.

Atlantic & North Carolina.—At a recent meeting of the stockholders the various propositions to lease the road were submitted. It was voted, after discussion, to defer action until an adjourned meeting, to be held Nov. 23, in Newbern.

Baltimore & Ohio.—In Baltimore, Sept. 25, in the United States Circuit Court, the Pullman Palace Car Company filed a bill in equity to restrain this company from running its own sleeping cars, as it purposed doing after Oct. 1, when its contract with the Pullman Company terminates. The bill is very long, and charges that the new cars built for the Baltimore & Ohio lines are infringements of patents owned by the Pullman Company. The case is set for hearing Oct. 7.

This is probably the beginning of a long litigation, as it is not likely that either party will give way until the questions at issue have been thoroughly tried.

Baltimore & Potomac.—A considerable force is now at work grading for a second track between Baltimore and Washington. The Patapsco and Eastern Branch bridges are being rebuilt for double track, and the smaller bridges on the line are also being prepared.

Brattleboro & White Hall.—The first section of this road from Brattleboro, Vt., northwest to Newfane, about 14 miles, is completed, and was opened for business Sept. 25. Work is actively in progress from Newfane to Londonderry. The road will be worked by the New London Northern.

Buffalo, Pittsburgh & Western.—This company has filed articles of incorporation to build a railroad from Buffalo, N. Y., to a point on the Pittsburgh, Titusville & Buffalo road in Portland, Chautauqua County, a distance of 51 miles. The capital stock is \$1,000,000, and the incorporators are H. A. V. Post, C. C. Pomeroy and others.

Burlington, Monmouth & Illinois River.—Work is in progress on the grading of this road, and it is nearly done from Peoria, Ill., to Farmington, including most of the heavy work. The Spoon River bridge has also been begun. From Farmington west 13 miles were graded last year.

Canadian Pacific.—A dispatch from Quebec, Sept. 27, says: "Sir John A. McDonald, who arrived at Quebec in the steamship Bardinian, states that satisfactory arrangements have been entered into with a syndicate for the completion of the Canada Pacific Railroad within 10 years, and for the running of a road for a further period of 10 years; also that he had obtained satisfactory guarantees for the perfecting of those arrangements for the construction of the road, as well as for the running of it for ten years. The syndicate was composed of eminent capitalists of Frankfurt, Paris, London, New York and Canada, these forming a combination of interests, in order to further emigration from all those countries."

Cairo & St. Louis.—In the United States Circuit Court in Springfield, Ill., Sept. 25, orders were entered authorizing the Receiver to buy some caboose cars and other necessary equipment for the road. Also to sell three of the locomotives now on the road, which are too light for profitable use.

Chesapeake & Ohio Canal.—The coal tonnage of this canal for July and August was 135,500 tons, a decrease of 19,803 tons, or 12.8 per cent., from the corresponding period of 1879. This decrease was caused by a strike of boatmen which began in June and caused a partial suspension of business for eight weeks. For the eight months ending Aug. 31 the tonnage was 369,796 tons, an increase of 7,064 tons or 1.9 per cent.

The earnings and expenses for the eight months were:

Gross earnings.....	\$213,832.06
Expenses.....	138,492.82
Net earnings.....	\$75,339.24
Paid on account of floating debt.....	74,463.96
Balance.....	875.28

The floating debt is that incurred on account of damages done by the freshet of 1877. The amounts paid off were \$59,463.96, being the entire amount due contractors and employees, and \$15,000 of the sum due to banks. There is still the sum of \$35,000 due to the banks, which is all the floating debt outstanding. The payments were made from revenue, as it was found impossible to negotiate any repair bonds while the Stewart suit is pending. As soon as the rest of the floating debt is paid, the net earnings will be applied to paying interest on the preferred bonds.

President Gorman urges the board to take some action toward regulating the rates of freight to be charged on the canal by boatmen.

Chester & Lenoir.—On the extension of this road track

has been laid from the old terminus at Dallas, N. C., northward to the Catawba River crossing, 3½ miles. The bridge over the river is to be finished Oct. 10, when the track will be laid as fast as possible to the Carolina Central crossing at Lincolnton, which is 14 miles from Dallas. Considerable grading has been finished north of Lincolnton.

Chicago, Milwaukee & St. Paul.—This company has had lately placed on the lists at the New York Stock Exchange 2,000,000 new bonds issued on the Chicago & Pacific Division, and \$525,000 on the Hastings & Dakota Division.

The formal transfer of the Chicago, Clinton, Dubuque & Minnesota road from La Crescent, Minn., to Clinton, Ia., 178 miles, with its branches from Turkey River to Wadena, Ia., 44 miles; Junction to Waukon, Ia., 23 miles; Bellevue to Cascade, Ia., 86 miles, and Caledonia Junction to Preston, Minn., 58 miles, making 389 miles in all, was made Sept. 16. On the same day also was made the transfer of the Wisconsin Valley road, from Tomah, Wis., to Jenny, 108 miles. These two roads add 447 miles to this company's mileage, bringing it up to 3,558 miles of road worked.

Quite a large town has sprung up at Mitchell, Dak., the present terminus of the Iowa & Dakota Division. The government lands along the line are being taken up very fast and a large number of settlers are reported moving in. The United States land office for the district has been transferred from Sioux Falls to Mitchell. The extension of the division has been located as far as the Missouri River, which it reaches 67 miles from Mitchell at the mouth of American Creek, just above the Lower Brule Agency. Grading is already well advanced on this section, and track is laid for 10 miles west of Mitchell.

The company is reported as extending its line into Nebraska. A line has been run by the engineers from Niobrara, Neb., which is on the Missouri opposite Running Water, the terminus of a branch of the Iowa & Dakota Division, and grading has already been begun. The report is that the road will go from Niobrara to the Union Pacific near Grand Island, with a branch westward to O'Neill City.

Chicago & Northwestern.—The grading of the Toledo & Northwestern Branch is completed to Webster City, Ia., and work has been begun on a section of 40 miles north from that place.

On the Chicago & Dakota line track is now laid to a point 20 miles east of Ft. Pierre on the Missouri. This end of the track is 90 miles west of Huron, Dak., and 230 miles from the junction with the Winona & St. Peter at Tracy, Minn. There is some heavy work near the Missouri, and it is not expected that the track will reach Ft. Pierre before November.

Chicago, Texas & Mexican Central.—This company, it is said, is about to undertake the work of building a railroad across Texas from the Red River, in Lamar County, to the Rio Grande, in Kenney County, with a northeastern extension into and through Arkansas, to connect with lines to St. Louis and Chicago. The parties engaged in the scheme are mentioned by Texas papers as an "Anglo-American Syndicate of bankers and capitalists."

The road is a reorganization of the Dallas, Cleburne & Rio Grande, and the new company seems to be controlled by Chicago parties. The company has offered to build the section between Dallas and Cleburne in a year, provided \$125,000 in aid of it can be raised on the line.

Chicago & Western Indiana.—On Monday of last week this company presented to the Chicago Common Council an offer to abandon its right to extend its road north of Harrison street in Chicago. It had the right to construct as far north as Van Buren street, east of Clark street, and part of the opposition to it was aimed at keeping it as far south as Twelfth street, about half a mile further south. The Lake Shore and Rock Island have their passenger station on Van Buren street, and if the Western Indiana came so far north it would have to encroach on a street further east, and add to the obstacles to crossing the South Division from east to west.

Friday morning, Judge Jameson refused to dissolve the temporary injunction forbidding the Lake Shore to interfere with the track already laid by the Western Indiana near the point of crossing; but in another court a case was pending which will finally decide this matter, and the Western Indiana cannot complete its crossing till this court has rendered its decision.

Cleveland, Canton, Coshocton & Straitsville.—This company has executed and placed on record a mortgage covering the proposed road and other property of the company, made to secure an issue of \$800,000 in bonds, to run 30 years and bear 7 per cent. interest.

Cleveland, Mt. Vernon & Delaware.—An application was last week made by counsel for the creditors of this company for the appointment of a Receiver, pending the further action of the Court in the foreclosure suit. The Court granted the petition and appointed Gen. G. A. Jones.

There is a report that an attempt will be made to secure the road in the interest of the New York, Pennsylvania & Ohio Company when sold.

Columbus & Toledo.—This company has out orders for four new locomotives, four passenger cars, 100 box and 500 coal cars, which are much needed to meet the demands of business.

Cumberland Valley.—It is stated that this company has decided to extend its leased Martinsburg & Potomac line from Martinsburg, W. Va., to Winchester, Va., about 20 miles. Surveys are to be made at once and work begun in the spring.

Delaware & Hudson Canal.—The prolonged drought has forced a suspension of navigation. On the Summit Level of 16 miles, between the Neverink locks and Phillipsport, N. Y., the water is so low that it has been impossible to pass loaded boats for several days.

Delaware, Lackawanna & Western.—After a suspension of dividends for four years this company this week declares one of 1½ per cent. No statement of the company's business is made public, but it is officially asserted that the net profits for the eight months of this year have been equal to 3½ per cent. on the stock, and the managers expect to be able to pay 1½ per cent. quarterly hereafter.

Denver, South Park & Pacific.—The Denver News of Sept. 22, says: "On Friday last a construction company was completed and the articles filed in the state office for the purpose of building a road from near Deansbury, on the South Park line, down the south fork of the Platte to Canon City, and from thence to Silver Cliff, making the distance from Denver to these two places about 50 miles nearer than the present route. On Monday last further articles were filed, increasing the stock of the South Park road \$20,000,000. Among the new incorporators are S. H. H. Clark, G. P. Morosini and J. J. Slocombe. Both Jay Gould and Russell Sage are connected with the movement, and it is understood that their money is furnishing part of the means for carrying out the project."

"This is a brief statement of the intentions of the company as outlined in their articles of incorporation. It is also

intended to build a broad-gauge road from here to Pueblo over the old surveyed route. This revives the fact that in its agreement with the Rio Grande the Santa Fe was guaranteed against a broad-gauge competition to Pueblo. But the Santa Fe, it seems, was not proscribed from aiding any other line that might want to enter into competition with the Rio Grande. There is no agreement between the South Park and Santa Fe roads in the new enterprise of the former, but there can be no doubt that when the new road is completed it will be of mutual advantage to both.

"The South Park Company will push their extension from Gunnison City through to Rico as soon as possible. There is a rich and undeveloped country there that has not yet been broken up."

Des Moines & Kansas City.—Surveys are being made for this road, and it is reported that work will be begun at Des Moines, Ia., as soon as the location can be made.

Detroit, Mackinac & Marquette.—A correspondent writes to the *Detroit Post and Tribune* as follows of this road: "For the first 10 or 12 miles after doubling the bay at Chocoma, the course is nearly due east and near the lake, much of the time in sight of it, and through pine plains and pine barrens, with a light sandy soil. The road-bed, as far as the track is laid, is in excellent condition. After getting some 15 miles out from Marquette the course is through heavy timbered lands, covered with hemlock, birch, maple and a goodly variety of other timber valuable for charcoal and other purposes. A large number of kilns will soon be in readiness for business along this road, and the shipment of charcoal to furnaces in and about Marquette will soon become an important item in its business. The termination of the first 20 miles is in the vicinity of Sucker Lake, Mountain Gap, a rather rough and rocky section extending some half-dozen miles, after which the course is said to be more level but heavily timbered. If one enjoys rough, wild scenery he can find it here to his fullest desire. The immediate work is being pushed under the careful supervision of George H. Briggs, Assistant Engineer. Grading and track laying are being pushed with all possible vigor at both ends of the line with a view of getting as many miles of iron laid as possible before snow flies. The route surveyed is about 158 miles, with 52.8 feet to the mile as the heaviest grade. The company expect to have some 40 miles on the west end and 30 on the east completed by the time winter sets in. The track is now laid some 18 or 20 miles out from the Straits. Clearing and grading will be continued through the winter. From a point some 40 miles from the Straits the company propose building a branch to the Sault Canal to eventually connect with a Canadian line now in prospect. This line from Mackinac to Marquette will form an important link in the Northern Pacific connection, which will only need the completion of the Jackson, Lansing & Saginaw to the Straits and a line from the western terminus of the Marquette, Houghton & Ontonagon to Duluth to make it complete. With this road completed by September, 1881, Marquette will find herself nearly 300 miles nearer Detroit and the east than she is now. Then Detroit will be about equidistant with Chicago. In my humble opinion, with the completion of this line of road there will grow up an important shipping point at or near Point St. Ignace. Already there is in process of erection there what is said will be the largest blast furnace in the world. In length of season and distance from eastern markets it would have a decided advantage over both Escanaba and Marquette. But whether ore can be shipped from Marquette to the Straits by rail at sufficiently low rates to make up for the difference in lake transportation is a question. There can be little question, however, that the completion of this road will add materially to the number of blast furnaces in the vicinity of Marquette from the ease in getting charcoal. Already the old Marquette & Pacific Rolling Mill has been transformed into a blast furnace with a capacity of from 50 to 60 tons of pig iron per day, and Grace Furnace, which has also been closed for several years, will soon, in all probability, be turning out molten lava. Others are sure to follow."

Eureka & Palisade.—This company is having surveys made with a view to extending its road from Eureka, Nev., to Frisco or Deseret, Utah. The most probable route is by Hercules Pass and Steptoe Valley, and across the Sacramento Plate in the Snake Range.

Gainesville, Jefferson & Southern.—Contracts have been let for the grading of this road from Gainesville, Ga., to Jefferson. The contractors are Sampson Mooney and C. M. C. Blackstock & Co., of Gainesville.

Great Western.—From the office in London, England, recently, the Secretary issued the following announcement: "I am instructed to inform you that the accounts of this company for the half-year ended July 31, 1880, as received by cable, and therefore subject to final audit and approval, show a balance (after crediting the dividend to Dec. 31 last on the shares of the Detroit, Grand Haven & Milwaukee Railway, held by this company), sufficient to pay in full the dividend on the preference stock for the half-year, and to pay a dividend on the ordinary shares at the rate of 1 per cent. per annum, carrying forward about \$800."

Greencastle, Eel River & Vincennes.—This company has been organized to build a railroad from Greencastle, Ind., the crossing of the Terre Haute & Indianapolis, the Indianapolis & St. Louis, and the Louisville, New Albany & Chicago roads, southwest through Putnam, Clay, Owen Green, Sullivan and Knox counties to Vincennes. The capital stock is fixed at \$1,000,000. The distance is 85 miles, and it is claimed that the road passes through some of the best coal lands in Indiana.

Gulf, Colorado & Santa Fe.—A dispatch of Sept. 24 says that a contract has been closed which secures the extension of this road from Belton, Tex., to Ft. Worth, the work to be begun at once. Ft. Worth has subscribed \$75,000.

Hudson Tunnel Railroad.—Working with the new caisson this company's engineers have at last reached the old air-lock and have recovered nine bodies of the men who were drowned when the collapse took place. The work proceeds slowly and it will take some days yet to reach the other bodies. It is impossible to say yet in what state the tunnel workings will be found. A coroner's inquest on the recovered bodies has been begun.

Indiana, Bloomington & Western.—The Indianapolis News says: "In respect to the labor and supply claims for the six months preceding Dec. 1, 1874, when the Indianapolis, Bloomington & Western Railroad went into bankruptcy, which are now in Court, the present corporation, the Indiana, Bloomington & Western Railroad Company, claim that they are not responsible for their existence, and had nothing to do with incurring the debt, and any effort to place it upon them is unjust. They bought the property under sale of the United States Court, subject to all claims decreed against it, and if the Court says these particular claims must be paid, which has not yet been said, the company will liquidate them on demand. They are simply awaiting the action of the Court upon the question of their liability in connection with the claims."

Intrejetio Entre Rios Eastern.—This company has been incorporated under the general law of Massachusetts

for the purpose of building a railroad about 130 miles long in the province of Entre Rios in the Argentine Republic in South America. The line is to extend along the banks of the Uruguay River, the navigation of which is interrupted for nearly 100 miles by formidable rapids. Above the rapids there are nearly 1,500 miles of navigable water in the river and its tributaries, which the road will connect with the navigation below the obstructions. The capital stock is \$2,500,000, and the incorporators are: T. Haskins Dupuy, Henry J. Davison, R. Dundas Chater, Samuel A. Strong, J. B. C. Drew, of New York; John H. Hardy, Samuel J. Elder, Henry W. Bragg, Rodney S. Hardy, P. H. Cooney, George W. Storr, Francis H. Lord, C. B. Southard, of Boston; W. S. Greene, of Opelika, Ala.

Lehigh Valley.—The *North American* of Sept. 18 says: "Eighteen months ago Mr. Sayre, Superintendent and Engineer of the Lehigh Valley Railroad from its opening, reported to the stockholders that it was intended at an early date to straighten the line of the road above Black Creek Junction, on the Lehigh & Mahanoy Division, and do away with four out of five bridges across Quakake Creek. The estimated expense of this was about \$80,000. Such a location of the road in the first place must have been bad engineering, for it required not only the building of four bridges across the creek, but it brought into the track as many curves, some of them on heavy grades, so that the load of an engine was limited to 60 or 70 empty cars. The new survey proposed that instead of crossing and recrossing the creek, the line should run right straight up until the final crossing was made. The business of the year 1879 was not such as to warrant an expenditure of \$80,000 for that work, which, according to the honest methods of the Lehigh Valley, must be charged to operating expenses, because the work did not add to the earning capacity of the road. This year, however, it has been undertaken, and the track has already been so located as to do away with two of the bridges, with a prospect of finishing all the work by the end of the year. When this is done, the maximum grade will be reduced about 20 ft. and so many curves taken out of the line that the engine-load can be raised from 70 to 90 or 100 cars. It has been the policy of the company to keep its track and equipment in the best condition, irrespective of the earnings of the line; but this year, in addition to the work above Black Creek Junction, nearly half a million has been paid for additional equipment. About 4,000 coal cars have been added; a number of heavy engines, and such line cars as were needed to give the road all the equipment necessary for a business that has steadily increased."

"In eight months the company has earned about \$350,000 gross and \$150,000 net more than in the corresponding period of last year, and it has paid off some of its floating debt; though with the extra work that has been done on the line it is doubtful if the net surplus is much greater than it was last year at this period. The profits of the next quarter will be the heaviest of the year, but the three winter months are the very worst of the year, and unless the company carries over a handsome balance from the end of the fiscal year it cannot earn enough to meet an increased dividend in April."

A suit of some importance is now in progress in the New Jersey Circuit Court at Somerville. It is nominally against Robert H. Sayre, but really against the company, and is in the form of an indictment for maintaining a nuisance in the shape of a shallow pond, to which has been attributed a malarial epidemic which has prevailed in the neighboring village of Bound Brook. The pond is used by the company as a source of water supply.

Little Rock & Ft. Smith.—This company publishes the following official statement on placing its securities on the lists of the New York Stock Exchange: The capital stock is \$4,096,185; bonds issued, \$2,847,500; bond scrip, \$1,957; total, \$8,900,192 on 165 miles of road. The floating assets and liabilities are as follows:

Cash assets after deducting balances due	\$37,979
Land notes on hand	514,613
Bonds not issued	300,000
Arkansas State bonds (\$27,000), cost	127,774
Total	\$980,366
Notes for past-due coupons	\$562,115
Five months' accrued interest	93,000
Surplus of assets	\$325,251

The total amount authorized to be issued under the mortgage is \$3,000,000, the mortgage being a first lien on the road, equipment and land grant. The bonds are payable Jan. 1, 1905, in Boston, with interest at the rate of 7 per cent. per annum. The trustees are Messrs. C. W. Huntington and Geo. Ripley. To meet the bonds when due, the company owns 867,000 acres of land unsold, and it also has over \$900,000 stock unissued.

Long Valley Coal Co.—This company is building a railroad three miles long from a junction with the Barclay Railroad, in Bradford County, Pa., up Long Valley to its coal mines, which are being opened for work. There will be on this road an inclined plane, to be worked by a stationary engine; this plane will be 1,300 feet long, with a rise of 410 feet.

Louisville & Nashville.—The work on the extension of the Pensacola & Selma line is progressing favorably. The grading is finished and ties distributed for 16 miles from the present northern terminus of the Pensacola line, and track has been laid for five miles. Work is also in progress from the northern end of the gap at Pine Apple, Ala.

The company has begun a new warehouse 50 by 300 feet at Pensacola, Fla. The railroad wharf there is also being extended in length and its width increased to 90 feet. A large number of creosoted piles are used in this extension.

Marshalltown, Waterloo & Milwaukee.—Arrangements have been made to organize this company for the purpose of building this road from Marshalltown, Ia., northeast through Waterloo, to a junction with the Iowa & Dakota Division of the Chicago, Milwaukee & St. Paul. The distance is nearly 100 miles.

Memphis, Holly Springs & Selma.—This company has been organized for the purpose of building a railroad from Memphis, Tenn., to Holly Springs, with a future extension to Greensboro or Selma, Ala. It is intended to use the grading done several years ago by the old Selma, Marion & Memphis Company.

Metropolitan Elevated.—The stockholders met in New York, Sept. 28, pursuant to call, to vote on the proposed consolidation with the New York Elevated and Manhattan companies. After a long discussion, in which strong opposition was manifested to the terms of the proposed consolidation, it was resolved to adjourn until the President and board of directors may be able to present some more satisfactory plan of merger.

Midland, of New Jersey.—In consequence of a misunderstanding of some parties as to their rights under the agreement of reorganization, it has been resolved to allow such parties as still hold the stock and bonds they received for

the old securities to sign the agreement and take assented stock up to Oct. 7 next.

Missouri, Iowa & Nebraska.—This road has been formally transferred to the Wabash, St. Louis & Pacific Company under the contract of lease lately completed. Possession was taken last week, but the changes in accounts and reports will be made to date from Oct. 1.

Missouri, Arkansas & Southern.—This company has been organized to build a railroad from Fayetteville, Ark., south by east to a point on the Little Rock & Ft. Smith road. The distance is about 45 miles. It is an extension of the line the St. Louis & San Francisco Company is now building to Fayetteville.

Nashville, Chattanooga & St. Louis.—At the recent annual meeting in Nashville the stockholders adopted resolutions authorizing the board to modify the existing contract with the Memphis & Charleston or to make a new one; approving the contract made for the transfer of the Nashville & Tuscaloosa road to this company on condition of its extension from Graham to Duck River; approving the contract made with the Sewanee Furnace Company for the transportation of ore and pig iron for 25 years; authorizing the board to endorse bonds of the Furnace Company at Cowan, Tenn., under proper restrictions.

Natchez, Jackson & Columbus.—This company is trying to secure an additional subscription of \$200,000 from the city of Natchez, Miss., to aid in completing the road.

Newburg, Dutchess & Connecticut.—It is reported that negotiations are pending for the lease of this road to the New York & New England Company.

New Brunswick.—It is stated that the owners of this road have completed negotiations with Montreal parties which secure the extension of the road next year from Edmundston, N. B., to Rivière du Loup, P. Q., where it will connect with the Intercolonial.

New Orleans, Mobile & Texas.—The following official statement was submitted on the admission of this company's securities to the lists of the New York Stock Exchange, and is of interest as giving an account of the reorganization and lease to the Louisville & Nashville. The securities admitted were \$4,000,000 stock and \$3,000,000 debenture scrip, dated May 8, 1880, having 50 years to run, and entitled to such interest, not exceeding 6 per cent., as can be paid from net earnings after paying interest on \$5,000,000 first-mortgage bonds. The statement is as follows:

The road is located in and between the cities of New Orleans and Mobile. The length is 141 miles, with a branch to Lake Ponchartrain of 6 miles, making a total of 147 miles main line; sidings, about 20 miles. The company was originally chartered by the state of Alabama in November, 1866, and by acts subsequently obtained from the states of Mississippi and Louisiana, with the various amendments thereto, possesses exceedingly valuable rights and franchises, with immunities from taxation in the states of Alabama and Mississippi, and valuable cessions from the state of Louisiana in the city of New Orleans. Construction was begun in 1868. The road was completed and put in operation in 1870. The gross earnings of the main line in 1879 reached about \$960,000, or about \$7,000 per mile. During and since 1873, in consequence of the general depression in business throughout the country, and the return at occasional periods of yellow fever, the average receipts for the last seven years have been a little in excess of \$700,000 per annum, or about \$5,000 per mile, on the main line. * * * Prior to the company's default of interest, July 1, 1874, there was outstanding, issued for costs of construction and for property belonging to the then existing company, of first-mortgage 8 per cent. bonds, \$4,000,000; second-mortgage 8 per cent. bonds, \$2,000,000; capital stock, \$4,000,000; total, \$10,000,000.

In consequence of the default then made the property passed into the possession of the trustees of the first-mortgage bonds, E. D. Morgan and J. A. Raynor, during January, 1875, and by them was operated under the order of the United States Court until its reorganization in April last. Owing to the worn-out condition of the property at the time of their entry into possession, it became necessary to renew every portion of the same, bridging, cross ties, rails, rebuilding of equipment, raising of road bed, and the making of embankments where before bridges had been used. All this was done during the time at an expenditure, including the allowances made for the administration, of about or nearly \$3,000,000, nearly two of which was derived from net earnings; balance was furnished by the lessees—nearly \$1,000,000—to pay trustees' certificates for expenses, allowances, etc. The equipment has been entirely overhauled and rebuilt—made as good as new. The bridges have all been rebuilt of creosoted timber, except some 6,000 lineal feet of the most important structures, where iron was used; several miles of embankment substituted, where before wooden trestle was used; the road bed raised from two to three feet for about 30 miles; all renewals of rail have been of steel, amounting to something over 100 miles; station-houses, shops and depot buildings rebuilt and put in repair. The property was sold under decree of court, at the instance of the first-mortgage bondholders, on April 24 last, upon which there was due, with accrued interest, about \$6,500,000; upon the second-mortgage bonds, \$3,000,000; capital stock, \$4,000,000; a total of about \$13,500,000.

It was purchased by a committee appointed for the purpose of perfecting a reorganization, which should make a lease of the property, with its franchises, to the Louisville & Nashville Railroad Company, which was done on May 8 last, and the property is now and has been operated since about the middle of May by the Louisville & Nashville Railroad Company, making a through line, under its management, from Louisville, Ky., to New Orleans, La. A condition precedent to making of said lease was that the Louisville & Nashville Railroad Company should issue its own bonds, secured by mortgage upon this property, for the amount of \$5,000,000, to be used in the purchase of \$4,000,000 of old first-mortgage bonds outstanding, and to provide \$1,000,000 for preferential charges, under the order of the United States Court. This was done by a tripartite mortgage of the New Orleans, Mobile & Texas Railroad Company, made to the Farmers' Loan & Trust Company, to secure the Louisville & Nashville Railroad Company for such issue of bond.

New York Central & Hudson River.—The following statement of gross and net earnings for August and the eleven months of the fiscal year ending Aug. 31 is published in London:

	1880.	1879.	Increase.
August:			
Earnings	\$3,023,000	\$2,546,000	\$477,000
Net earnings	1,330,120	1,120,240	209,880
Eleven months:			
Earnings	30,175,000	25,474,000	4,701,000
Net earnings	13,277,000	11,208,500	2,068,500

The net earnings are estimated, it is said, by taking the average per cent. of operating expenses of the road for 10 years past as the basis for calculating net earnings this year. We know them to be incorrect: they are greater than here reported.

It is reported that arrangements are in progress for con-

solidating under one management all the co-operative fast freight lines now operating of this road.

The following letter from Mr. J. H. Rutter, Third Vice-President, to the general managers of the different roads which are partners in co-operative freight car lines that run over this road has been published:

"Since the President of this company arrived in Europe I have had a letter from him in which he directed me to ascertain, if it be possible, and, if so, to take immediate steps for the consolidation of the co-operative fast freight lines running over this road, or the placing them under one management. We have now running over this road, in addition to the 'Merchants' Dispatch,' the 'Red' (with its Wabash section), the 'White,' 'Blue,' 'Canada Southern,' 'Hoosac Tunnel,' 'Milwaukee,' and 'Midland' lines. The subject at various times has been discussed, but except as to the 'Red' and 'White' lines never seriously considered. Will you at your earliest convenience please give me your views upon the subject, and state what has been your experience, if any, in consolidation of the lines running over other trunk lines than the New York Central? I expect the President will arrive in New York about the middle of October, and would be glad to lay before him, upon his arrival, a report embodying your views upon the subject."

New York Elevated.—At the special meeting in New York, Sept. 25, a long report was submitted, setting forth the action of the board in relation to the proposed consolidation. The report stated that no feasible plan of merger had been found, owing to legal obstacles, and suggested the following plan: Change the tripartite agreement and leases, in the following particulars:

1. Make the payment of the 10 per cent. dividend to depend upon the earnings, and, if there be a deficiency in any quarter, the same to be covered by scrip, payable, with interest, at 6 per cent., out of future earnings; the first 20 per cent., with interest on half from Sept. 15, 1880, to be paid to the New York Company.

2. Place the control of the leased property in the hands of a joint committee of nine, three to be appointed by the directors of each of the three companies, New York, Metropolitan and Manhattan.

3. This committee to be annually appointed and the arrangement to continue until the legislation next mentioned be obtained.

4. Legislation to be applied for, giving the stockholders and bondholders of the three companies power to choose the directors of the Manhattan Company.

The stockholders approved the action of the board in accepting the award of the arbitrators as to the value of the stock, and resolved to authorize the board of directors to conclude an arrangement with the other companies "on the basis of those suggestions, or upon any basis having the same general design."

New York, Pennsylvania & Ohio.—The gauge of the Franklin Branch, from Meadville, Pa., to Oil City, 36 miles, was to be changed this week.

An attempt to lay an additional track through Youngstown, O., on the old canal bed, has been met by a temporary injunction, sued out by Brown, Bonnell & Co., who claim the ownership of the property under a purchase from heirs of the parties who owned the land before right of way for the canal was taken. The canal having been abandoned, it is held that the right of way reverts to the original owners.

North Carolina Midland.—This is the name of the company which is to build the Virginia Midland extension from Danville, Va., to Statesville, N. C. It is formed by the consolidation of three chartered companies, the Dan River & Yadkin Valley, the Winston, Salem & Mooresville and the Winston, Salem & Madison. The capital stock is to be \$2,500,000.

Northern Pacific.—The St. Paul Pioneer Press says: "The crossing of the Northern Pacific road over the Missouri River at Bismarck is now assured. The scheme adopted is a high bridge, which will be a rival of the St. Louis bridge. It will be 70 feet high and contain five sections, three of 400 feet and two of 100. The foundation of the abutments is a solid blue clay, 40 feet below high water mark. The river at Bismarck is about 1,300 feet wide. To protect the abutments and confine the water to a channel 1,200 feet wide a dyke, 1,700 feet long, is now being built from the west side. The east bank is a high bluff. The dyke will be finished before the river freezes this fall. Engineer Clough has great faith in the scheme and thinks it will withstand the rush of the spring rise and break up. If it does, the bridge proper will be constructed early next season. If not a tunnel will be immediately commenced. The Eads scheme of mattresses is the one used, and the stone for sinking and covering them is being hauled to the water's edge. The bridge will cost over \$1,000,000, and rank among the great bridges of the world. Assistant Engineer Fuller, who has charge of the work, received orders to rush the work, and a large number of men are now at work."

A dispatch from Duluth says that a line from Northern Pacific Junction to Superior, Wis., is to be built next year, the agreement being to finish it by the close of 1881. It will be built under the old Superior & St. Croix organization, but will be owned by this company. The company is to receive a deed for one-third of the town of Superior.

At the annual meeting in New York, Sept. 29, the following resolutions were passed:

Whereas, The great work for this company to do is the completion of its railroad from its terminus on Lake Superior to Puget Sound, and it is the paramount duty of the company to the government and the people of the United States that this work be completed with all the energy and rapidity consistent with proper economy and the prudent use of the resources of the company; and

Whereas, By the completion of the whole undertaking the present property of and in the corporation will be greatly enhanced in value; therefore

Resolved, That the directors of the company be, and they are hereby requested and advised to provide, at as early a day as in their judgment shall be prudent, for the construction, completion and equipment of the company's railroad from its eastern terminus on Montreal River to Puget Sound, and for that purpose to use and employ all the resources of the company so far as required, and to execute such mortgage or mortgages on the whole or any part or parts of the line constructed and to be constructed, with the appurtenances and lands granted by Congress appertaining thereto, as shall seem to the board of directors best calculated to accomplish the early completion of the enterprise.

Ohio & Mississippi.—Receiver King's report to the Court for August is as follows:

Cash balance, Aug. 1.....	\$191,615.37
Receipts for the month.....	543,548.93
Total.....	\$735,164.30
Disbursements on all accounts.....	439,812.78
Balance, Sept. 1.....	\$301,351.52

The receipts were \$109,736.15 in excess of the disbursements for the month.

Pensacola & Perdido.—This short lumber road has thus far had a very successful year. The road has been im-

proved and 10 lumber trucks of an improved pattern are to be added to the equipment. On Sept. 1 the company not only paid its bond interest but also invested \$5,000 in United States bonds for the sinking fund. The road is nine miles long, from Pensacola, Fla., to the lumber mills on the Perdido River.

Pennsylvania.—Contracts have recently been let for the grading and masonry required to complete the proposed change of line between Radnor, Pa., and Eagle, and between Green Tree and Malvern.

Bids have also been received for putting up the foundations for the new Filbert street station in Philadelphia.

Peoria, Pekin & Union.—This company has filed articles of incorporation in Illinois for a railroad to run from Peoria, Ill., to Pekin, about 10 miles. The principal office is to be in Peoria. The incorporators are Solon Humphreys and A. L. Hopkins, of New York; George L. Bradbury and John B. Cohn, of Peoria, and C. R. Cummings, of Chicago. Their names indicate that the proposed road is in the joint interest of the Wabash and the Peoria, Decatur & Evansville companies.

Philadelphia, Wilmington & Baltimore.—A new survey is to be made of the proposed branch of the Delaware Division from Dover, Del., through Milford to Rehoboth Beach.

Philadelphia & Reading.—The Receivers have made important additions to the list of coupons of the Coal & Iron Company divisional mortgages that they are willing to redeem. Interest on six different mortgages falls due this month, and the Receivers announce their readiness to compromise three of them. They offer 6 per cent. instead of 7 for the semi-annual interest on the mortgage upon the Swatara Company's lands, amounting to a million; 5 per cent. instead of 7 on the Houtz, Meyer and Kinneer tract, the principal of which is \$235,000, and 4 per cent. instead of 6 on the Salem Coal Company's lands, on which there is a mortgage of \$150,000. This is a scaling of \$10,000 on the Swatara Company's lands; \$4,700 on the Houtz, Meyer and Kinneer tract, and \$3,000 on the Salem Coal Company's lands. Total interest due, \$47,775; offered, \$39,925.

Pittsburgh Local Railroad.—This company has filed articles of incorporation in Pennsylvania to build a railroad about six miles long along the banks of the Allegheny and Monongahela rivers in Pittsburgh. This is the line which is to connect the Pittsburgh & Lake Erie with a large number of shops and mills in Pittsburgh.

Pittsburgh, Virginia & Southern.—The committee appointed at a recent meeting in Lexington, Va., has issued an address calling attention to this proposed line. The road is to begin at Lexington, connecting with the North River Branch of the Richmond & Allegheny Railroad, of which that place is the terminus; cross the Chesapeake & Ohio Railroad near Goshen, the West Virginia state line in Pocahontas County, the Baltimore & Ohio Railroad at Grafton, and either follow the Monongahela Valley to Pittsburgh or connect with the Pittsburgh, Virginia & Charleston Railroad. The letter states that the road will connect the Bessemer steel iron field in the vicinity of Lynchburg, the specular, brown hematite and magnetic iron ores of the Blue Ridge region and the red shale limonite and fossil ores of the North and Mill Mountain ranges with Pittsburgh and the West Virginia and Monongahela coal region at the nearest accessible points between the furnaces and steel works of Pittsburgh, the coal beds upon the Monongahela and its branches and the inexhaustible iron fields of Virginia. Moreover they represent that it will give to Pittsburgh and Allegheny City the shortest, cheapest and best outlet to the markets of the southern Atlantic states, and to the ports and harbors of Virginia.

Pleasantville & Ocean City.—The track is now laid on this road from the Philadelphia & Atlantic City road at Pleasantville, N. J., south by west to Somers Point, a distance of 7½ miles. The road will probably be opened for business in a few days; it will be worked as a branch of the Philadelphia & Atlantic City.

Quebec, Montreal, Ottawa & Occidental.—It is said that the government of the province of Quebec has concluded an agreement to lease this road at a yearly rental of \$100,000. The lessees are Wm. Gooderham, of Toronto, Ont., and associates, who are interested in the projected direct line from Toronto to Ottawa. The lease will have to be ratified by the provincial Parliament.

Rochester & State Line.—The New York Supreme Court has dismissed the suit of the city of Rochester, N. Y., against Isaac S. Waterman, Henry A. Taylor, Thomas Leighton and others, to recover \$600,000 for the failure to deliver to the city \$600,000 of the capital stock of this company.

St. Louis, Iron Mountain & Southern.—It is announced that this company has bought the Memphis & Little Rock road, in which it has held a controlling interest for some time. The purchase will be made by exchange of stock, and this company will issue 15,000 shares of its stock for that purpose.

The road extends from Little Rock, Ark., to Hopefield, on the Mississippi opposite Memphis, 135 miles. The Iron Mountain secured control and now incorporates the road with its own line, in order to complete its hold on the Arkansas business. It is claimed also that the road has been earning a surplus over interest charges for a year past.

St. Paul, Minneapolis & Manitoba.—This company has just received patents for 385,000 acres of its land grant in Marshall and Kittson counties in Minnesota, in the Red River Valley.

The Northern Pacific Company has begun suit in the United States Circuit Court to prevent this company from extending the branch which it is building from Barnesville, Minn., northwest, across the Northern Pacific track and right of way in Clay County. The Court has granted a temporary injunction pending a further hearing in the case.

South Carolina.—A conference was held in New York recently between the Purchasing Committee of the bondholders and representatives of the holders of a majority of the secured floating debt in New York and Charleston. The result of the conference was that the representatives of the floating-debt creditors determined to advise their principals to accept the terms of settlement proposed by the Purchasing Committee, which are: To pay the principal and interest of the debt secured by the second mortgage bonds, one-third in cash, one-third in notes running 6, 12 and 18 months, secured by bonds, and the remaining one-third in second mortgage bonds of the new company at 90 cents. The floating debt secured by first mortgage bonds to be paid in full in cash.

Standard Oil Co.—The pipe line which this company has begun to build from its works at Constable's Hook, N. J., was at first supposed to be merely to connect with the Pennsylvania Railroad. The report was then that it was to reach the Erie, and it is now said that it is to extend across New Jersey and reach the com-

pany's lines in Pennsylvania, making a through line from the oil regions to tidewater. The pipe across the New Jersey Central track has still to be guarded, and further opposition is expected in crossing the Hackensack and Passaic Rivers, where the only available bridges are controlled by the Pennsylvania Railroad.

Tehuantepec.—The Boston Advertiser says: "The concession obtained from the Mexican government by Mr. Edward Learned, of Pittsfield, Mass., is fast maturing in results of the first commercial importance. Special care was first taken to see that all former grants for a railway across the Isthmus of Tehuantepec were extinguished. Then, under special privileges sanctioned by the Mexican Congress, Mr. Learned and associates proceeded to carry out the enterprise of uniting the two oceans by a railway to be 140 miles in length, having its eastern terminus at the mouth of the Coatzacoalcas River. Mr. C. W. Van Brocklin, formerly of the New York Elevated Railroad, is the Resident Engineer, from whom the accounts received are in all respects encouraging. Eighty miles of road have been located, and a line of railroad more than 30 miles in length will be opened by the close of this year. The climate has not proved hostile, and while a part of the route is through rich sugar and coffee plantations, which the engineer compares to the open prairie lands of the West in the United States, there are other sections which are a dense forest jungle, but nowhere are there difficult excavations in rock or tunneling. Large quantities of material are being shipped. No less than five vessels have been chartered and dispatched from New York within the past month, all of them taking out railway iron and supplies. The shipments comprise 1,500 tons of steel rails received by way of Europe, and the full equipment will follow in regular monthly installments from the English manufacturers. The contract was made very favorably, just before the boom, the requirement being 50 lbs. per running yard, delivered at Liverpool, of the first test, at the rate of 100 tons per month. The July installment has been received, and that for August is now loading. All the spikes, fish-plates, etc., are purchased in the United States. The government of Mexico, at the last Congress, voted the appropriation of \$75,000 per mile for the first section of six miles, at the same time conferring upon the treasury power to pay a like amount for the next section as soon as it is completed. The Tehuantepec Company were also notified that the \$100,000 in silver dollars, deposited as a pledge of good faith, can now be withdrawn and replaced by \$200,000 of the company's bonds, the property on the Isthmus being ample security."

Tennessee State Bond Suits.—A dispatch from Nashville, Tenn., Sept. 27, says: "In the cases of Stevens vs. the East Tennessee, Virginia & Georgia Railroad, and all the other railroads in the state of Tennessee, whether solvent or insolvent, in which an attempt was made to establish a lien in favor of the bondholders against the railroads that have retired their indebtedness or have been sold by the state of Tennessee, Judge Withey, of Michigan, before whom the cases were argued last April and May in Nashville, has decided that the bondholders have no lien against solvent or insolvent roads, and that the roads are in no wise liable for said bonds, and has dismissed all the bills. The decision clearly indicates that the bondholders have never had the shadow of a claim against the roads, the roads having owed a debt to the state of Tennessee which they have paid under the law, and is a full and complete vindication of the railroads and railroad officials against the charges of fraud and corruption which have been so freely made by the plaintiff in these cases."

The cases are of such importance, and the bondholders have so large an amount at stake, that an appeal will probably be taken to the United States Supreme Court.

Texas & Pacific.—Notice is given to holders of stock trust certificates issued by Matthew Baird, John McManus, Frank S. Bond, W. T. Walters and Alfred Gaither, Trustees, that in accordance with certain resolutions passed by a majority in interest of the holders of such certificates, at a meeting held in Philadelphia, Dec. 6, 1879, that on and after Oct. 1, 1880, the Trustees will be prepared to receive, at the office of the Texas & Pacific Railway Company, in Philadelphia, all outstanding certificates issued by them, and in exchange therefor will make proper transfers on the books of the Texas & Pacific Railway Company, of a like number of shares of the capital stock of that company, for which regular certificates will be issued. Parties at a distance can transmit their certificates by mail, addressed to Charles E. Satterlee, Secretary, No. 275 South Fourth street, Philadelphia, first signing the power of attorney attached to the certificate in their names, having signature properly witnessed, and fill in the blanks, making transfer to the Trustees for exchange, and the number of shares named in the certificates. Should the owner desire to have his stock discharged to the New York agency, for registration and transfer at the Farmers' Loan & Trust Company in New York City, he will so state in his letter of transmittal to the Secretary.

Wabash, St. Louis & Pacific.—Contracts have been let for the grading of 18 miles of the new line from Chicago to Peoria, and more are to be let very soon. The new line will leave the Chicago Division at Ritchie, 53 miles from Chicago, and will run west to Mazon River, and thence west by south to Streator, the northern terminus of the Streator Division. It will be 42 miles long, making the distance from Streator to Chicago, 95 miles. From Ritchie west it will cross the Braidwood coalfields, from which a considerable business is expected. At the Mazon River, and also at Streator, the new line will connect with the Chicago, Pekin & Southwestern road. A large amount of the bonds of that road are owned in the Wabash interest, and if the company secures that road at the expected foreclosure sale, it is probable that it will be used from Streator and possibly from the Mazon River, to Peoria. It is said to be possible, however, that the line may be built through to Peoria, in which case the value of the Chicago, Pekin & Southwestern would be very small. By the proposed line the distance from Chicago to Peoria will be 168 miles, or 161 by using 12 miles of the Toledo, Peoria & Warsaw, against 162 by the Chicago & Alton and Chicago, Pekin & Southwestern, 161 by the Rock Island, or 167 by the Toledo, Peoria & Warsaw and Illinois Central.

West Jersey.—The Philadelphia North American says: "The West Jersey Railroad Company is making progress in the settlement of claims for injuries by the May's Landing accident, and it is doubtful if any number of them are taken into court. The company promptly notified, through a special agent, the injured persons that they were ready to meet their responsibility without the intervention of the law, and the priests of St. Ann's Church were requested to say to their parishioners that whatever ready money they needed would be forthcoming. Several of the claims have already been settled, both for injuries and deaths, but the company has declined to comply with the demands of Mr. T. P. Judge, the lawyer who volunteered at the time of the accident and has since taken up the cases of some of the injured parties. The loss will fall upon the West Jersey Company, and the probable cost, estimated by comparison with similar settlements, is variously estimated at from \$50,000 to \$75,000."